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MONTHLY SUPPLEMENT

METALS

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In This Issue

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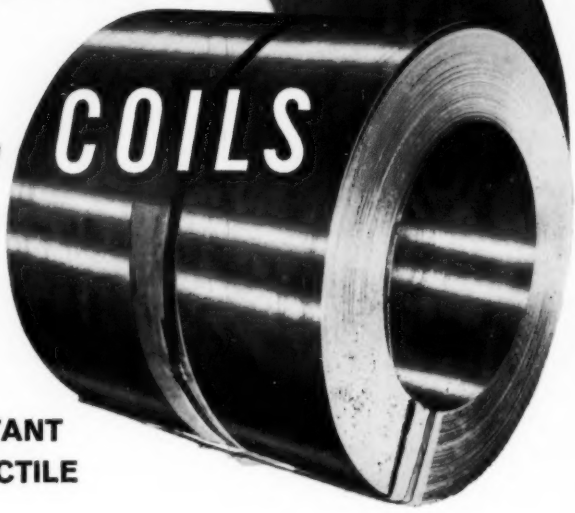

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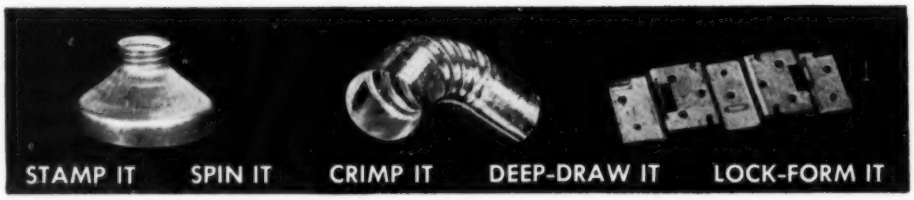

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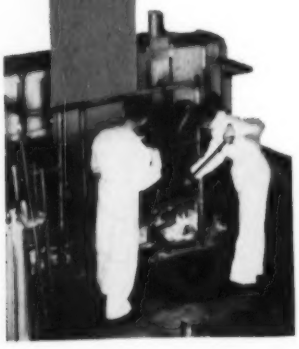

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TWO LINE *Editorials*

A Moscow paper claims that the Communists are now "at the peak of their success." Well, anyhow, since they have taken over Tibet they are sitting on top of the world.

* * *

Lots of Democrats can't understand why the Republicans are squabbling so much over who shall be defeated when he runs for President in 1960.

* * *

A prominent jockey, after losing a race, complained that his horse "had a negative attitude." Well, horses always have liked to say "Neigh, neigh."

* * *

Moving picture producers, it is reported, are "trying desperately" to coax patrons back to the movie theaters. When will they go so far as to try the desperate experiment of making better pictures?

* * *

A New York paper tells of a "planetary collision" that took place over 300 million years ago. And their sluggish reporters have just found out about it?

* * *

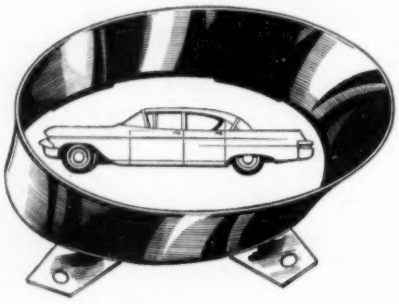
A professional tea taster died in New York at the age of 88. If it had not been for the injurious effects of drinking so much tea he might have lived to a ripe old age.

BUSINESS IN MOTION

To our Colleagues in American Business . . .

Recently, a manufacturer of top-flight motor cars was having trouble in producing the escutcheon for the front bumper lamps used on his newest model.

First of all, the breakage of the part was excessively high. Secondly, the escutcheon which is drawn at an angle, and contains a concave surface on the inside presented a problem in that, after buffing, polishing and flash plating, the finish produced did not exactly match the chrome-plated bumper.



Having worked with this manufacturer in helping him successfully solve other metal-working problems, Revere's Technical Advisory Service was called on for consultation.

The possibility of using Revere 70-30 Brass Strip was discussed and after a cost analysis, showed its complete feasibility. Samples were made up for testing on production-line stamping presses. A trial run was made and much to the encouragement of all concerned, there was not one "breaker" in the lot. Switching to this more ductile metal not only resulted in less wear on tools, but it was found that little adjustment of the presses was necessary from that of the setting used on the previous material. Breakage was reduced to less than 1%.

Also, after the escutcheons were polished and plated and recessed in the bumpers, the finish was found to be an excellent match. Here, again, by "fitting the metal to the job" Revere's Technical Advisory Service was able to reduce manufacturing costs while improving the quality of the product.

It is entirely possible that by having Revere's Technical Advisory Service work with your engineers, designers, production men, purchasing agents . . . individually or collectively . . . they can help you, too, realize substantial savings such as these.

And, because practically every industry you can name is able to cite similar instances, we suggest that no matter what your suppliers ship you, it would be a good idea to take them into your confidence and see if you cannot make a better product at lower cost by specifying exactly the right materials.

REVERE COPPER AND BRASS INCORPORATED
Founded by Paul Revere in 1801
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Washington Report

March 20, 1959

RUMORS that the Government was considering the sale of some of the copper in its inventory galvanized metals-minded Senators into action during the month in review and resulted in the prompt passage of a resolution opposing any such action. The resolution, sponsored by Senater Mike Mansfield (Dem., Mont.) and seven other senators, declares that "it is the sense of the Senate that the best interests of the country from both the national security and economic standpoints will not be served by the release of any part of any Governmental inventory of copper at this time, that on the contrary, incalculable damage to the national security and the economic well being of the nation would result by such action."

The copper involved in the disposal discussion totaled 128,000 tons. The metal was accumulated by the Government under floor-price contracts with producers under the Defense Production Act. Since this copper has not been placed in the strategic stockpile, it is available for sale without any authorization by Congress. At press-time there were reports that legislation was being drafted to require some form of Congressional consent before such sales could be made.

Discussing the question of copper sales by his agency, Leo Hoegh, Administrator of the Office of Civil and Defense Mobilization, issued the following statement:

"It is a firm policy of OCDM that whenever we dispose of any material in the DPA inventory to exercise a great care that our actions do not disrupt the market or adversely affect the industry involved.

"If, and when, a determination is made to dispose of copper in our DPA inventory, the program will be started at a rate not to exceed 5,000 tons per month and will of course be continually under review to assure consistency with the above-stated policy."

Interviewed by METALS after passage of the Senate resolution, Senator Mansfield warned that if the Government disposed of its DPA inventory copper, there would be further, price cuts, mine closedowns and strained relations with Canada, Mexico, Peru and Chile. The Senator stated that the sale of the copper would create "ill will" and that what was needed was "good will" and understanding. He also noted that if the OCDM were to dispose of the copper, the United States would lose tax revenue from hard-hit copper producers in the United States and from workers who would be laid off.

Senator Mansfield added that the Administration should have used better judgment by discussing the matter of the copper sale with representatives of the mining States and with industry so that the precipitous decline in the price of copper would not have taken place.

In view of the Senate's unanimous vote in favor of his resolution, Senator Mansfield said: "It is now up to the Administration to take heed."

Other DPA Holdings

In view of the intense interest in the Office of Civil and Defense Mobilization's consideration of the disposal of copper from the Defense Production Act inventories METALS queried the Commerce Department as to the quantities of other metals carried in this reserve.

Among the stockpile grade metals carried in DPA inventories in September, 1958 were:

Bismuth, 22,901 pounds.
Cobalt, 7,976,000 pounds.
Lead, 5,768 tons.
Mercury, 4,310 flasks.
Palladium, 7,884 ounces.
Nickel, 105,000,000 pounds.
Tungsten, 53,742,000 pounds.

The DPA inventories also contain 26,000,000 pounds of non-stockpile grade tungsten as well as a substantial tonnage of aluminum. Although the figures reported are of last September, agency officials indicated they are much the same at the present time.

Ask Lead, Zinc Aid

Although copper held most of the headlines, lead and zinc also figured prominently in the metal news from the Capital. Three bills have been introduced in the House along the lines of a measure offered previously to the Seante to aid the lead and zinc industries. The House bills, which seek to peg lead at a minimum of 15.50 cents a pound and zinc at 13.50 cents a pound, were presented by Democratic Representative Lee Metcalf (Montana), Walter C. Baring (Nevada) and Gracie Pfost of Idaho.

Basically, the bills would authorize the Secretary of Commerce to adjust lead and zinc quotas quaterly to maintain the lead and zinc prices at the minimum levels. No hearings have been scheduled so far.

Stricter curbs on lead and zinc imports also were urged by a three-man House , Interior subcommittee. The subcommittee, consisting of Reps. Randall (D., Mo.), Chenoweth (R., Colo.), and Edmondson (D., Okla.), made the recommendation in a report on its Easter vacation visit to the lead and zinc mining area in Missouri, Kansas and Oklahoma.

The report said conditions were "just as bad as they were last September" when import quotas were imposed, "and no relief appears in sight under present quotas."

The report said witnesses questioned by subcommittee members agreed "the import quotas imposed last September were a step in the right direction, but far too small a step for significant effect upon the domestic mining industry."

"Until more substantial action is taken to assist this essential industry, this nation will continue to suffer grave economic loss in the mining areas, while the human tragedy of unemployment and actual hunger in American homes continues," the report said.

The report, directed to Interior Committee Chairman Wayne N. Aspinall (Dem., Colo.), said import quotas had not been effective either in opening mines or in reducing lead and zinc inventories in this country.

In another development, Interior Secretary Seaton told a Washington news conference he could see no reason for broadening the curbs in the lead and zinc field to include lead and zinc products at this time. He added that his minerals experts are keeping close watch to see whether product imports are being used to cir-

(Continued on Page 16)

Long-Term Prediction:

The Outlook for Copper Is Favorable

By ROBERT P. KOENIG, President, Cerro de Pasco Corporation

A LITTLE over two years ago, with the help of tables, charts, data and other statistical paraphernalia, not to mention a cloudy crystal ball, I undertook a public discussion of the long-term outlook for copper.

I therefore welcomed the invitation extended by your Association for the opportunity it gives me again to look forward into the future and to test, in the light of today's knowledge, the validity of the assumptions on which that earlier talk was based, and of the conclusions which I then drew from them.

That earlier talk, late in 1956, was a testament to the forward surge of the world economy in the first decade following World War II. The pertinent characteristics of that period, as I saw them, were these:

1. An impressive and rapid industrial expansion;

2. A remarkable increase in world population;

3. A lively demand for copper and other industrial raw materials, both in the United States and Europe as well as in the underdeveloped areas of the world.

All these factors, I felt, added up to the presence of a strong growth factor at work in the future course of copper consumption. And I concluded by suggesting that a projection of these factors into the future might reasonably be expected to result in a further steady rise in the world's copper needs . . . a rise accompanied by increasing supplies selling at relatively stable prices.

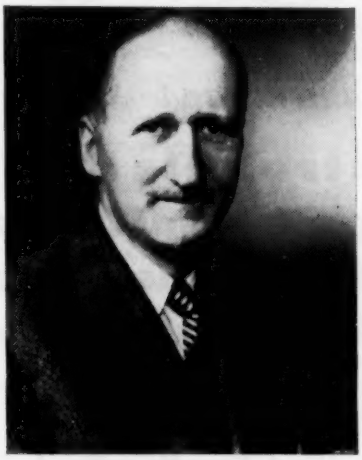
In actual figures, I foresaw overall copper demand for the Free World in the year 1965 attaining a level of 5.1 million short tons, as compared with 3½ million tons in 1957.

This was the nub of my projection two years ago.

Copper Picture Today

What is the picture today? And what can we say of the prospects for copper, its production and consumption as, late this year, we move into the 1960's?

First, it should be noted that the recent economic recession in the United States was not accompanied by any recession in the growth of the world's population.



ROBERT P. KOENIG

The increase in population which in 1955 was reported to be rising at a rate of 25 million or 1 per cent a year, is now reported to have exploded during 1957 and 1958 at an annual rate of 45 million or 1.6 per cent per year.

In reviewing this aspect of my discussion of two years ago, I discover that informed estimates at the time foreshadowed a growth in world population to a level of 3¼ billion by the year 2,000.

This estimate is now believed to be far short of the mark. The United Nations Demographic Yearbook for 1957 indicates, in fact, that this estimate is applicable not for the year 2,000 but for 1967. It further suggests that by the year 2,000 — which we need to remind ourselves is less than 41 years from now — the world will be populated with 6¼ billion human beings.

I would therefore suggest, as an aside, that you hold this estimate in mind the next time you try to park your car in a crowded downtown area.

Prospective World Demand

Now what does this foreshadow in terms of prospective world demand for a raw material such as copper?

Such a rate of increase inevitably provides a highly dynamic factor in the world economy. As population grows, material demands expand and competition among nations increases for the remaining natural resources. The complexities of life increase. Cities become larger, and farmland, forests and even deserts retreat before the onslaught of asphalt, concrete, steel . . . and, we may add, copper.

The circumstances of our present world confront us with a rate of change never before encountered. Technology and science have leapt ahead so fast that we confront today totally new measures of space, energy and speed. Scientific advances have coincided with vast new political and social changes. In a generation marked by two World Wars we have seen the overturn of long-established political structures and the emergence of large numbers of new nations.

Along with these developments has come the awakening of the masses of people in areas hitherto largely untouched by, even unaware of, the achievements of others with more advanced standards of living. Now, having learned of and seen the marvels of this age, they too want the electricity, the homes and cars, the better food and clothes.

These material aspirations help to explain why, in the period since the close of World War II, the underdeveloped countries of the world have experienced a relatively rapid growth of industrial production.

The accelerated rate of post-war industrial expansion, in the underdeveloped areas as well as in the United States and Western Europe, has been reflected by an intense demand for industrial raw materials.

Rates of Growth

As regards rates of growth in different regions, much necessarily depends on the choice of comparative base dates. In 1938, for example, the United States, with copper production exceeding consumption by some 35,000 tons, was still a modest exporter of copper. By 1957, however, the country's copper-consuming industries were absorbing almost 2½ times the tonnage required in 1938, with the result that the nation found itself a net importer of copper. Even in

Text of address delivered April 8, 1959, before 46th annual convention of the National Association of Waste Material Dealers in Chicago.

1938 Europe very largely existed on imported copper. But whereas in 1938 European copper-consuming industries absorbed tonnages at a ratio of better than 2 to 1 over United States industry, by 1957 the ratio had altered to the point where Europe was consuming less than a third more copper than the United States.

It would appear, therefore, that despite the high degree of post-war industrial recovery abroad, some expansion still is possible for European copper-consuming industries, particularly if they are to recoup their pre-war position vis-a-vis the United States.

The comparison of copper consumption on a regional basis over the 20-year period from 1938 through 1957 shows that the underdeveloped areas of the world have almost quadrupled their consumption of copper during these two decades. That combined total demand for copper which in 1938 represented but 6 per cent of total Free World consumption, had by 1957 risen to 15 per cent of Free World demand. With every indication that this trend will continue to gather momentum, a tremendous new demand for copper is indicated in those areas of the world which are the chief centers of nonferrous metal production.

Free World Consumption

Coming closer to the present day, Free World copper consumption, as a whole, expanded by 31 per cent in the period from 1950 through 1957. If we assume an increase in consumption of approximately the same amount over the next several years, an expansion in usage from 3½ million short tons in 1957 to 4.6 million tons can be expected by 1965. This forecast, however, makes no allowance for a possible rate of increase in the Free World economy in excess of that from 1950 through 1957.

An accelerated Free World economic expansion appears inevitable, however, based not only on the explosive rate of population growth, but also on the surge of peoples everywhere to achieve progressively more of the world's material goods and services.

The generating of electric power is one of the most dynamic indices of a prospective increase in copper consumption. Approximately half the Free World's consumption of copper goes into the electrical and power industries. Broadly speaking, the progress made by the electrical industries is geared to the rate at which electrical demand grows. During the first half of the Twentieth Century, for the United States and Britain at least, electricity consumption doubled every decade. An indication that this rate of increase will be exceeded in the second half of this century is suggested by Electrical World, which in its 9th Annual Electrical Industry survey, forecasts a rate of increase in the United States of considerably more than 280 per cent during the two decades from 1955 to 1975.

Electrical Industry Outlook

One electrical industry spokesman has recently expressed the opinion that even this rate substantially underestimates the pace of the industry's future growth. This view holds that electric energy requirements in the United States could actually reach 3-trillion kilowatts by 1963. Since electrical demand in this country in 1957 amounted to approximately 630-billion kilowatts, or roughly 20 per cent of the projected increase, this estimate of quintupled electric energy demand is interesting, if only for its indication of the lengths to which one informed spokesman is willing to go in gauging the opportunities for his industry's future expansion.

Other informed sources report, with regard to the future growth of consumption of electric energy abroad, that with reasonably favorable circumstances prevailing, the rate of growth for the Free World as a whole should be little, if any, less than the growth projected for the United States.

Enough has been said in this connection, I think, to emphasize the probability that if copper continues in its historic relationship to electric power usage, the prospects are bright for copper consumption to move ahead at a pace considerably above the 31 per cent advance recorded in the 1950 to 1957 period.

Per Capita Yardstick

Another yardstick is that of per capita consumption. If the per capita consumption per annum of virgin copper by the United States is compared with that of the rest of the world, the latest available figures are approximately 18 pounds and 2¾ pounds respectively. Assuming that the same copper consumption ratios continue into future years, and using population projections based upon the most recent United Nations' studies, world copper consumption in the year 1965 is indicated at about 5.8 million short tons.

By way of completing this particular exercise, it is interesting to speculate what the world demand for copper will be when the rest of the world raises its per capita requirements to one-fourth of the current United States figure. Assuming the projected growth of population mentioned a moment ago, if this per capita increase in the world outside the United States developed by 1965, total world consumption in that year would attain a level of 8.4 million short tons.

It is pertinent at this point to observe that in all exercises of this kind, the outcome is largely predicated on the nature of one's ground rules. The use of "statistics" without proper interpretation can easily produce a number of foul balls. For example, there is always a danger of exaggerating results if one relys too heavily on per capita consumption as a basis of estimating future copper needs. After all, if deliveries to fabricators are used as measures of consumption, the consumers are fabricating plants other than individuals. Thus, the needs of underdeveloped countries are apt to be supplied to a considerable extent from imports of fabricated products from plants existing in more highly industrialized nations. Of course, as time progresses, there will be investment in fabricating plants in unterdeveloped countries themselves. But enough has been said, I believe, to illustrate the danger of assuming that there is necessarily a direct relationship between the number of persons and the amount of copper consumed.

Again, if you correlate copper consumption with electric power plant capacity, there is much the same risk of exaggerating results. This is due to the fact that there is a great variation in the amount of copper used per kilowatt of capacity from one plant to another and among countries. For example, a new plant located near other plants which have a transmission network already established may require a great deal less copper per kilowatt than one that is constructed, let us say, in Alaska or Southern Rhodesia.

One way in which more reasonable results might be obtained would be to tie copper consumption as measured by deliveries to fabricators to the indices of industrial production for individual countries and then add the totals together as a composite figure.

For present purposes, however, I am quite willing to abide by the growth indications previously mentioned. Weighing all the elements of indicated expansion together, and with due respect for the dangers of over-inflating the extent of the future trend, I feel secure in sticking by my estimate of two years ago, which, as you will recall, projected a level of

Free World demand for copper by 1965 of 5.1 million short tons.

It is pertinent at this point to consider the supply side of the industry picture. From all the evidence now available, it appears that the industry is confronted with the need for a major effort to produce sufficient copper to meet expanding world consumption.

A recent meeting of the International Geological Congress calculated that indicated copper reserves of all the world might well approximate 190 million tons of recoverable copper. These indicated reserves would be adequate to supply the world for 48 years at the 1957 rate of consumption, or for 38 years if the rate of consumption should increase to some 5 million tons a year by the mid-1960's, as I think it will.

The question of reserves, however, must be treated with considerable qualification. As used by Cerro de Pasco, the term "ore reserves" is limited to those ore bodies whose tonnages and mineral contents have been so well established by exploratory and development work as to involve little or no risk that they will fail to yield, when mined, the tonnages and metal grades estimated for them. Other companies in the industry may not of course use precisely the same criteria in defining their own ore reserves. There is in addition the hard fact that what constitutes ore reserves on a given date will depend on prevailing economic conditions. Since prices move up and down in cyclical fashion, it follows that the concept of what is ore and what is not is a most elusive one. Assuming that costs remain constant, a mine may have more ore if copper prices rise. If, on the other hand, prices remain constant, the same mine may increase its ore reserves if, because of some technological or other development, it is able to reduce costs. For all these reasons it is clear that estimates of world ore reserves cannot be more than a very rough approximation.

Free World copper mine capacity is currently over 3.7 million short tons per year. The Copper & Brass Research Association estimates that new or improved facilities already scheduled or underway will bring that figure to 4.2 million tons by 1962, which is an increase of about 15 per cent over the present level, including allowances for depletion of certain orebodies. The same rate of increase would be likely to result in a supply on the order of 4.6 million tons by 1965. This projection, however, underestimates the level of production which I believe — given a reasonable measure of price stability at levels a few cents per pound above today's market — will result from discoveries of new deposits and from future, intensive development of presently known ore bodies.

I shall not attempt to predict the future level of copper prices, except to the extent of indicating my interest in the forecasts made by Mr. Arthur Notman. His formula, based on the present average cost of production, suggests that the market price for copper over the ten years ending with 1966 will average between $.35 and $.37 per pound.

If this forecast should prove correct, I have no doubt that copper will be forthcoming in amounts fully adequate to satisfy the increased consumption I have indicated for 1965.

Copper prices averaging between $.35 and $.37 over a period as extended as that suggested by Mr. Notman, cannot help but make scrap metal a highly-prized commodity. There is no doubt that the collection and re-use of scrap is a considerably more organized and profitable business than it was before World War II. As such, the upward trend in copper consumption previously discussed will, in the long run, entail a progressively larger consumption of scrap. Of one thing I am very sure, that we are together in our hope that with increased copper demand will come profit margins higher than those reported in the recent past by all segments of the industry.

If the future for copper is as bright as I have painted it, the industry will require greatly increased amounts of risk capital. Mining is not an industry one turns on and off like a faucet. It takes time to bring new properties into production, and above all, it takes substantial amounts of capital. Sir Ronald Prain, in a recent discussion of the subject, reported upon studies which indicate that the capital cost required to underwrite presently planned expansions to existing copper mines in the Free World average about $850 per ton of annual production capacity. For new mines, which are now in the process of development, the comparable cost averages about $1,400 per ton, while for future projects, as yet unplanned, the cost is likely to run even higher per ton of capacity. Assuming a future copper consumption of some 5 million tons annually, the studies conclude with the suggestion that the capital investment required to create the requisite capacity may be as much as $3 billion.

An investigation of the supply side of the copper picture cannot be complete without discussion of the inroads upon use of the metal that may arise from possible substitues for it. In this connection, however, let us remember that copper has been in use, in one form or another, for almost 10,000 years, and is therefore not likely to be replaced by some Johnny-come-lately, however flashy.

Copper has literally thousands of uses, of which perhaps 65 to 70 per cent represents uses impervious to substitution. In the remaining fields of use, copper must compete on the basis of price, but it is axiomatic, I think, that the decision to substitute or not to substitute will vary greatly from use to use, from market to market and from country to country. The bright future indicated for copper is related to a measure of price stability at levels high enough to induce the risk capital required for expanded production, yet low enough to keep the metal fully competitive vis-a-vis possible substitutes. The voluntary production cutbacks initiated by certain Free World producers, including Cerro de Pasco, late in 1957 and early last year, were of material assistance in strengthening the copper markets at a time when an apparent imbalance prevailed between demand and supply. The resort to remedial action of this kind by a substantial segment of the industry suggests the possibility that the business of mining and recovering copper, which has been notably (some would say, infamously) cyclical in the past, may in the future be able to modify the extremes of its high and low price swings. Future price fluctuations with less "bounce to the ounce" would, on the whole, be greatly welcomed by an industry which has traveled a pogo-stick course altogether too long for its own comfort.

Outlook Favorable

These considerations appear to me to substantiate in considerable measure the basic assumptions on which I based my former view of the outlook for copper. The one undisputed point which can be made with assurance in this frenetic age is that projections of future growth patterns, if based merely upon the expectation of advancement at past rates of progress, are almost certain to be surpassed.

With a world fast bent upon industrial expansion, with population growing at a rate greatly in excess of even recent predictions, and with demand for copper and other raw materials rapidly increasing as a result of the combined influence of mounting industrialization and population growth, the outlook for copper is a favorable one.

Research Program Is

Giving the Lead Industry a Boost

By ROBERT L. ZIEGFELD, Secretary-Treasurer, Lead Industries Association

A YEAR ago I had the privilege of describing for you what the lead industry has done cooperatively over the last 30 years towards the maintenance and expansion of markets for lead and its products. I mentioned that the industry had still more ambitious plans for the future, then in the making.

Now, just a year later, I'm proud to come before you with the information that these ambitious plans have already developed much faster than we could have hoped. This is particularly true of scientific research to find new uses and new products for lead.

During 1958 pig lead producers in the United States, Canada, Mexico, Great Britain, Australia, South America and Africa banded together to finance a vastly expanded research program. In fact the funds approved for this research program in 1959 are about four times what was spent for cooperative research on lead in 1958. Now, I'd like briefly to review some of the research set in motion in 1958 and then tell you of some of the 1959 plans. In talking of research please bear in mind that far from every research project bears fruit in the development of markets and that even most of those that do, take considerable time to come to fruition.

Last year, since I talked to you at this meeting, research projects were initiated in such widely divergent fields as lead cable sheathing, the heat emissive properties of lead, lead as a cementing material for other insoluble elements that might improve its properties, lead alloys using a new technological approach, and lead in certain types of ceramics.

Significance of Program

I won't bore you by going into the details of specific research projects, but I would like to try to give you some of the highlights of the significance of some of these programs. Take cable sheathing, for example. In the late 1920's this was the largest use of lead at something over 200,000 tons per year. Today it is consuming less than half that amount and will probably be the fourth largest consuming use of lead. Rubber, plastics, aluminum and various combinations of materials have developed into tough competition.

Two ways of improving lead's competitive position appear to be open to us. One would be to improve the physical properties of lead alloys used for the purpose. We hope that our research on lead alloys will develop a significant improvement. The second way is to reduce manufacturing cost and, perhaps, improve the quality of the product. A project we are conducting on what is variously called continuous extrusion or continuous casting of lead alloys now appears to offer us competitive advantages in the near future.

ROBERT L. ZIEGFELD

Research on the heat emissive properties of lead compounds is of an entirely different nature. Success in this venture could open up wholly new markets for lead. Here quite by accident it was found that certain lead compound coatings on other materials could greatly increase the heat emissivity. Our research is to find out just how this comes about and in what form lead is most efficient. This may some day have important applications in heating and refrigeration systems.

Any research that can come up with lead alloys having improved physical properties could have great impact on the use of lead. The physical properties of lead are limiting factors in many applications such as chemical equipment, cable sheathing and building construction. While a tremendous amount of work on lead alloys has been done in the past, application of new concepts in metallurgy may lead to favorable results.

New Applications

In ceramics, research of recent years has already led to new applications. For example, the peculiar electrical properties have brought about lead's use in electronic ceramics and its fluxing properties make it important to the porcelain enameling of aluminum. Our research in ceramics is concentrated in graduate research fellowships in universities offering degrees in ceramic engineering. The number of fellowships being supported is now nine compared with three a year ago. They are in seven different universities from coast to coast and in different application areas in the ceramic industries, ranging from basic research on phase diagrams through the use of lead compounds in glass, ceramic bodies, glazes on clay pipe and brick, porcelain enamels for aluminum and steel, and ferroelectrics.

Our research has come up with a number of new paint formulations. One provides unequalled protection for both new or rusted galvanized surfaces and is a mixture of red lead, zinc oxide, and iron oxide in a suitable vehicle.

A number of new research areas are being explored in 1959 with some new contracts already in effect. Before mentioning any of these I would like to point out that those I have just described are continuing into this year.

Just getting under way are two intriguing projects. One involves the reinforcement of lead with a felted mat of fibres of other stronger metals to retain the desirable characteristics of lead while imparting to it better physical properties.

Another is a study of properties and commercial applications of lead chemical compounds with particular reference to organo-lead compounds. Tetraethyl lead is the most important organo-lead compound developed to date. It has increased its consumption of lead from nothing in 1923 when it was introduced to over 175,000 tons a year now. But there are literally hundreds of other organo-lead compounds which may find commercial application and should be investigated. This may be true of inorganic lead compounds as well. A basic study of organo-lead compounds is also in the planning stage.

Other Areas of Research

Other areas of research that are either being investigated for their potentialities or are in the planning state include the powder metallurgy of lead, the sound and vibration attenuation properties of lead, thin sheet lead and lead foil laminations with other materials, lead coatings on metals, plastics and other materials, and many more. I think you can see that no stone is being left unturned to unearth fields in which research may be profitable. On the other hand no shotgun approach, without careful screening to determine those projects which appear to have the best possibility of success, will be considered.

This research program is under the direction of Dr. Schrade F. Radtke, who has had a broad and stimulating background in research, and who comes to us and to the American Zinc Institute, to head the research programs of both organizations from a position as director of the metallurgical research laboratory of the Reynolds Metals Co., at Richmond, Va.

(Continued on Page 18)

Presented at the National Western Mining Conference, sponsored by the Colorado Mining Association, Denver, Colo., Feb. 6, 1959.

U. K. COPPER PRICES FAIRLY FLUID DURING MARCH; EUROPEAN BUYERS NOT INCLINED TO REENTER MARKET

Tin Hovers at Close to Pivotal £780 Level With Buffer Stock Selling as Steadying Factor; Little Change Is Reported in Lead and Zinc Situations

April 6, 1959

By L. H. TARRING
London, England

COPPER prices during the past month have been fairly fluid but on balance have shown some improvement. In the early part of March with the high level of consumer demand in the United States, which temporarily outstripped the available supplies from the primary and custom smelters, the London market moved up sharply reaching a peak of £257.10.0d on the 17. A fairly sharp setback then occurred initiated by rumours of the possibility of the release of Government stockpile copper in the U. S. and also the possibility of a temporary suspension of the U. S. import duty.

Although neither of these rumours proved to be very solidly based, the sharp break in prices on the Commodity Exchange in New York caused a shake out in the London market with cash at one time down to about £243.

One of the remarkable features of the past few weeks is that despite these fairly wide price movements, European consumers as a whole have shown little inclination to re-enter the market on any substantial scale. It has to be borne in mind, of course, that most of the larger users have a substantial part of their total requirements covered by period pricing contracts and in the absence of any expansion in demand for their products have had no occasion to indulge in any additional day to day buying.

This view may have been encouraged by the surprise showing of the February statistics which indicated a rise of some 20,000 short tons in free world producers' stocks. Presumably, therefore, it was felt that even if a serious stoppage occurs in American production after June 30, the world is not devoid of copper reserves.

Succession of Strikes

Meanwhile, a succession of strikes, some of them very short lived, has obviously served to keep the supply position, particularly in the U. S., on the tight side. Sentiment over here, particularly two or three weeks ago, was influenced, to a not unimportant degree, by the major unrest in Nyasaland and the Belgian Congo. This seems to have quieted down for the time being but a very watchful eye will be kept on the situation there as obviously any serious trouble affecting the Rhodesian Copperbelt and the Congo mines would have a very serious effect on the market.

Although early in April stocks in London Metal Exchange official warehouses slipped back a little, during March they increased by over 2,500 tons to nearly 10,000 tons. Whilst this is still not regarded as a very adequate reserve, it helps to diminish the backwardation and indeed, for a day or two, cash and three months metal were level. Operators here, however, would undoubtedly be very much happier if the stocks were at least twice their present size.

Ndola Shipping Copper

Sterling area supplies of copper have undergone two interesting developments just recently. The first is that the big new electrolytic refinery at Ndola in Northern Rhodesia has begun to ship copper and is actually building up its rate of output.

The second is that on April 1 the big Bancroft Mine in the Copperbelt resumed production after being shut down for a year under the output restriction arrangements of the Anglo-American Corporation of South Africa's group of mines. It is believed that good advantage has been taken of this interval to overcome water problems encountered in the early stages. For the time being, only one shaft is being worked but output will, it is hoped, be up to about 50,000 tons a year before 1960.

On a rather similar scale it is interesting to regard the decision of Messina (Transvaal) Development Company to erect a smelter and fire refinery to treat the ore from its Southern Rhodesian mine.

Metal Council to Meet

It will be interesting to see if any important decisions are taken at the meeting in May of the International Wrought Non-Ferrous Metals Council. High-level producer representation at the meeting is expected, presumably in order that considered opinions may be given from the producer angle on the proposals made by the fabricators, that if they provided better and more up to date statistics on copper consumption and the rate of orders booked for semi-finished products, producers would be able to adopt a more flexible production policy thereby minimizing movement of stocks and materially helping open market price stability.

Tin Around £780

Apart from a short bout of nervousness just before the introduction of the higher export quotas for the second quarter of the year, tin prices during the past month have stayed pretty close to the pivotal figure of £780. It has now become fairly obvious that the Buffer Stock manager is inclined to dispose of tin at only a narrow margin above £780 which is quite sufficient reason to prevent any major upward movement whilst on the other hand it is fairly clear that the supply-demand situation, excluding the Buffer stock, continues sufficiently tight to bring prices back to this level fairly quickly.

It was interesting to note that at the beginning of the April-June quota period, sales in the Eastern market were not on a particularly heavy scale which indicates that Malayan mines seem to have learned the lesson that a spate of ore selling at the beginning of a quota period is bad tactics since it merely forces down the prices temporarily to the detriment of the producers themselves.

Buffer Stock Selling

At one time, it was wondered whether the Buffer Stock Manager would wait until prices had climbed appreciably above £780 before beginning to release metal but it is now pretty obvious that there is a very strong desire on the part of the producing countries in the International Tin Agreement to see production quotas increased at the earliest possible date whilst agreeing that, as a prerequisite, the Buffer Stock Manager must turn an appreciable proportion of his total holdings into cash. Judging by the pace at which stocks in London Metal Exchange official ware-

AVERAGE BRITISH PRICES FOR COPPER, TIN, LEAD, ZINC

(Per Long Ton)

Mean of Bid and Asked Cash Quotation at Close of Morning Session on London Metal Exchange

	COPPER			TIN			LEAD		ZINC	
	Cash	3 Months	Settlement	Cash	3 Months	Settlement	Current Month	3rd Following	Current Month	3rd Following
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1954 Averages	248 17 11	239 17 7	249 0 11	719 8 11	709 17 7	720 6 7	98 8 12	94 7 4	78 5 4	77 16 11
1955 Averages	351 14 11	341 0 3	352 5 6	740 2 12	736 12 11	740 12 8	105 17 3	105 9 6	90 13 4	89 12 3
1956 Averages	328 14 5	324 13 1	329 1 8	787 14 9	774 7 7	788 13 3	116 6 5	114 8 9	97 14 3	95 3 7
1957 Averages	219 8 10	221 0 3	219 12 10	754 15 4	747 10 10	755 3 11	96 12 9	96 13 2	81 11 7	80 1 1
1958										
January	171 7 5	174 0 5	171 10 11	730 15 5	725 0 3	731 0 5	72 3 4	72 10 11	62 11 4	62 3 7
February	162 17 9	164 2 11	163 0 9	731 11 0	732 2 9	731 17 6	74 3 7	74 0 6	63 17 2	63 10 11
March	170 2 9	171 4 5	170 5 11	731 5 9	735 13 1	731 12 5	74 15 9	74 11 3	63 9 9	63 11 2
April	175 12 0	176 18 6	175 15 0	731 0 3	729 18 6	731 7 6	72 17 5	73 0 4	62 7 6	62 11 7
May	178 15 11	180 15 1	178 19 1	730 15 11	733 19 6	731 1 5	72 2 9	72 9 6	61 17 1	62 5 3
June	194 12 3	196 3 8	194 15 6	730 5 6	732 16 8	730 10 6	73 5 6	74 3 1	64 3 6	64 13 0
July	199 16 4	200 11 8	199 19 9	731 4 4	733 4 2	731 9 7	71 9 8	72 19 2	63 11 11	64 5 6
August	205 16 3	206 1 2	205 19 6	730 9 0	731 11 0	730 15 0	70 7 8	71 17 1	63 16 8	64 11 4
September	209 6 3	209 8 6	205 9 1	718 2 11	713 17 1	718 19 1	70 10 5	71 17 1	65 0 8	65 7 9
October	236 5 9	229 15 5	236 13 1	740 16 9	735 11 6	741 8 3	74 1 0	74 11 6	70 9 4	69 9 10
November	242 19 6	236 11 9	243 4 3	757 12 6	759 3 9	758 0 6	75 11 8	75 16 9	75 5 6	72 16 1
December	220 19 11	220 14 8	221 2 10	756 9 1	758 1 2	756 16 2	72 4 1	72 6 7	74 6 10	71 5 1
1958 Averages	197 13 3	197 9 3	197 16 11	734 18 6	734 17 11	735 6 1	72 15 8	73 6 10	65 17 12	65 10 12
1959										
January	230 2 0	227 5 10	230 5 0	758 15 6	759 4 9	759 2 10	71 17 0	72 3 3	74 17 8	72 18 8
February	236 4 2	235 10 8	236 7 6	772 9 9	773 9 0	772 15 0	69 19 4	70 16 6	73 13 8	71 19 8
March	248 10 3	247 12 2	248 13 6	779 14 9	783 5 9	780 1 6	69 10 3	71 4 2	75 2 5	73 18 8

houses have been dropping in recent weeks, the Buffer Stock has been reduced already by a significant tonnage but when it is recalled that at one time it amounted (excluding the Special Fund) to some 23,500 tons, it seems probable that quite a bit more selling will be undertaken before the Buffer Stock Manager feels adequately placed to resume market support tactics if conditions so demand.

Lead Tone Easier

Although on balance prices have not shown very much change in the London lead market in recent weeks, the recession to under £66 a ton at the time of the March settlement on the Metal Exchange is indicative of the fact that there is not very much resistance to any depressing factors.

For some time the supply position on this side of the Atlantic has been a fairly easy one and consumer demand has shown very little indication of any substantial improvement. The news, therefore, that various attempts are to be made through legislation in the U. S. to spread the effect of import quotas to products as well as to ore and raw metal and even to make the metal restrictions much more drastic in the interest of maintaining a substantially higher domestic price than that now ruling, came as something of a cold douche.

The drop in the U. S. domestic price to 11 cents was regarded as merely a reflection of the easier tone in London at that time though it is not without significance that American producers have not seen their way clear to raise the price again following the modest recovery in quotations here. The British Government's Economic Survey for 1959 had a cheerful tone and it is hoped that this accurately forecasts improvement in industrial activity and demand for lead later this year, particularly with an expansionist Budget.

In the first two months of this year, the European zinc market made a

(continued on Page 18)

U. K. COPPER STATISTICS

According to the British Bureau of Non-Ferrous Metal Statistics, U. K. production of refined copper in January was 6,463 tons of primary and 9,047 tons of secondary compared with 8,073 tons and 9,238 tons respectively in December. Stocks rose slightly during the month to 50,827 tons of refined (49,903 tons at December 31st) and 15,114 tons of blister (14,281 tons). Of the refined stocks consumers held 28,622 tons (24,337 tons). Consumption in January was over 2,000 tons lower at 54,395 tons, details being as follows:

PRODUCT	January 1958	January 1959
Unalloyed Copper Products		
Wire*	22,643	20,644
Rods, bars and sections	1,818	1,706
Sheet, strip and plate	5,212	4,353
Tubes	5,476	5,325
Castings and miscellaneous	650	650
Alloyed Copper Products		
Wire	1,508	1,450
Rods, bars and sections	10,946	10,868
Sheet, strip and plate	8,353	10,435
Tubes	2,282	1,926
Castings and miscellaneous	6,399	6,110
Copper sulphate	3,088	3,523
Total all products	68,375	66,990
Copper content of output	56,615	54,395
Consumption of refined copper†	46,437	39,815
Consumption of copper and alloy scrap‡ (copper content)	10,178	14,580

* Consumption of H. C. copper and cadmium copper wire rods for wire and production of wire rods for export.
† Virgin and secondary refined copper.
‡ Consumption of copper in scrap is obtained by the difference between copper content of output and consumption of refined copper, and should be considered over a period since monthly figures of scrap consumption are affected by variations in the amount of work in progress.

U. K. LEAD STATISTICS

According to the British Bureau of Non-Ferrous Metal Statistics lead stocks in the U. K. during January rose from 45,444 tons (36,487 tons imported and 8,957 tons English refined) at the end of December to 48,102 tons (40,339 tons and 7,763 tons). Production during January totaled 6,286 tons, compared with the December figure of 7,792 tons. Full consumption details are given below:

	January 1958	January 1959
Cables	9,655	9,044
Batteries — as metal	2,488	2,272
Battery oxides	2,514	2,050
Tetraethyl lead	1,664	2,022
Other oxides and compounds	1,720	1,967
White lead	778	760
Shot	411	360
Sheet and pipe	5,427	5,818
Foil and collapsible tubes	405	272
Other rolled and extruded	506	472
Solder	1,144	1,141
Alloys	1,461	1,556
Miscellaneous uses	1,125	1,138
Total consumption	29,607	28,872
Of which:		
Imported virgin lead	15,981	14,654
English refined	6,831	5,993
Scrap including remelted	6,795	8,225

U. K. TIN STATISTICS

The British Bureau of Non-Ferrous Metal Statistics reports that U. K. consumption of tin during January was 1,769 tons against 1,802 the previous month. Production during the month rose to 2,955 (30 tons of which were secondary) from the December figure of 2,396 (46 tons) while stocks in the U. K. at January 31st showed a decline at 16,744 tons from the December total of 19,054 tons. Details of consumption of primary tin are given below:

	January 1958	January 1959
Tinplate	804	837
Tinning:		
Copper wire	47	53
Steel wire	8	8
Other	66	68
Total	121	129
Solder	148	193
Alloys:		
Whitemetal	244	255
Bronze and gunmetal	226	171
Other	40	30
Total	510	456
Wrought tin*:		
Foil and sheets	29	28
Collapsible tubes	27	20
Pipes, wire and capsules	5	3
Total	61	51
Chemicals†	81	103
Other uses‡	9	
Total all trades	1,734	1,769

* Includes Compo and 'B' metal.
† Mainly tin oxide.
‡ Mainly powder.

U. K. ZINC STATISTICS

During January, U. K. stocks of zinc rose from 37,094 tons at the end of December to 37,733 tons according to the British Bureau of Non-Ferrous Metal Statistics. Of the January total consumers held 15,640 tons. U. K. production was 5,397 tons compared with 6,829 tons in December. Full consumption details are given below:

	January 1958	January 1959
Brass	8,794	9,520
Galvanizing	7,980	7,935
of which: General	2,930	2,857
Sheet	1,763	2,177
Wire	1,863	1,571
Tube	1,424	1,330
Rolled zinc	2,093	2,107
Zinc oxide	2,537	2,393
Zinc diecasting and forming alloy	4,247	3,669
Zinc dust	840	907
Miscellaneous uses	982	958
Total all trades	27,473	27,489
Of which:		
Slab zinc		
High purity (99.99%)	4,753	4,036
Electrolytic and high grade (99.95%)	5,471	4,969
G.O.B. Prime Western and debased	10,122	9,961
Other virgin material	350	211
Remelted zinc	436	522
Scrap — (zinc content)		
Zinc metal, alloys & residues	2,873	2,771
Brass and other copper alloys	3,468	5,019

U. S. COPPER MARKET SIMMERS DOWN; SMELTERS CUT PRICE 2c TO 32c POUND; PRODUCERS HOLD AT 31.50c

Lead Declines ½c to 11c New York; Zinc Steady; Tin Shows Little Change; Quicksilver Tight, Spot at $239-$240 Flask; Silver Holds; Cadmium Weaker

April 13, 1959

THE copper market simmered down during the month in review, with the custom smelter quotation dropping 2.00c a pound. Smelter electro copper on April 13 was quoted at 32.00c a pound delivered, 0.50c a pound over the unchanged 31.50c-a-pound price maintained by the large primary producers.

Lead weakened, moving down 0.50c on April 1 to 11.00c New York, with zinc unchanged on the basis of 11.00c East St. Louis for the Prime Western grade. Aluminum was steady. Tin prices tended to soften during the month in review, while platinum and quicksilver showed more strength. Silver was steady.

Smelter Copper at 32.00c

The custom smelter electrolytic copper price dropped 1.00c a pound on April 10 to 33.00c delivered. On the next business day, April 13, the smelter quotation was marked down another cent to 32.00c delivered. The reductions did not come as too much of a surprise. Recent weakness in London and on the Commodity Exchange, lower prices for copper in the dealer market, and above all, the fact that consumers were not interested in paying 1.50c to 2.50c a pound more for smelter copper than they did for producer copper, all combined to make the smelter quotation vulnerable.

On April 10, some business was done at the 33.00c; before the market could really be further tested at this level on the next business day, April 13, the price was reduced another cent to 32.00c. What the reaction will be on the part of consumers to the 32.00c level remains to be seen. The recent lethargy among buyers might change overnight in the opinion of some custom smelters, especially if new strikes were to break out.

Currently, the only strike still in effect is that at the Tacoma refinery of the American Smelting & Refining Co., with the outlook for a quick settlement not very promising at the moment. There is also the uncertainty as to what is likely to happen at the Anaconda property in Butte, Mont., after a Federal court renders its decision on April 20.

LATE MARKET DEVELOPMENTS

The copper market was thrown into a tizzy on rumors that the Government intended to dispose of 128,000 tons of copper held in Defense Production Act inventories. The Senate on April 17 approved a resolution opposing such action. (See Washington report on page 5.) Free world copper production hit a new peak in March.

The lead price rebounded on April 20 to 11.50 cents a pound on the basis of improved demand.

Primary aluminum production in March totaled 157,189 tons, a new monthly high. First-quarter output of 456,013 tons also set a new record.

Basically, the situation that appeared to be the prime factor in the recent upward movement in copper prices — the possibility of a strike in the domestic mining industry on June 30 when three-year contracts with the unions expire — is unchanged. But consumers, while still pressing for copper from the large primary producers, seem to have lost a good deal of their panicky urge to buy copper, no matter at what price.

The producers have experienced no let-up in demand at their 31.50c level and are still unable to take all the business that is being offered them. Producers are sold out for April and are trying to stretch their May output so as to take care of their customers' needs. Stocks carried by producers are so small they can hardly be drawn upon to supplement their output.

Smelters, meanwhile, also marked down their buying prices for scrap copper. On April 13 they were bidding for red metal scrap on the basis of 26.00c a pound for No. 2 heavy copper and wire. Offerings by dealers, at this level, tapered off considerably. Earlier in the month in review, when smelters' bids were higher, scrap had flowed much more freely from dealers to smelters. In fact, custom smelters' intake of scrap copper for March was the largest for any month since Ocotber, 1958, with that one exception, the largest for any month since May, 1956. March intake totaled 19,522 tons, compared with 14,712 tons in February. Intake for the first quarter of 1959 came to 48,745 tons, compared with 37,325 tons in the like 1958 period.

Brass and bronze ingot prices changed twice during the month in review. On March 17 ingot selling prices were increased 1.00c to 2.00c a pound, depending on grade. On April 10 prices were reduced 0.75c to 1.00c a pound, except for all alloys in the Yellow Group (Nos. 400 through 409) which were unchanged. The April 10 change in prices was the fifth this year and the first time that prices were reduced.

Lead Reduced ½c to 11c

The half cent drop in the price of lead that occurred during the month in review also did not come as much of a surprise. A custom smelter initiated the reduction by dropping to 11.00c New York on April 1, and other sellers took similar action.

At 11.00c the price is back to where it was between February 24 and March 5. On that latter date it had moved up to 11.50c. Prior to the rise consumers had bought in excess of 30,000 tons at 11.00c in a period of two weeks. Fortified with a good sized inventory, consumers bought sparingly at the 11.50c level. Added to the light consuming demand was the fact that the price in London had dropped to a level that was considerably below the domestic parity, thus making the domestic quotation vulnerable.

The market, at 11.00c, appeared to be holding its own in spite of the continued light demand for lead. There has been no change in consumers' policy of holding down their purchases to the minimum. In producing circles there was a strong feeling that consumers actually were buying less lead than they were using, and were making up the difference by drawing on their stocks. If that be so, the question is how long con-

sumers can continue to operate on that basis.

Lead World Stocks Mount

Although world lead output declined in February, stocks continued to mount during that month. Stocks of refined lead rose in February by 18,536 tons to 368,279 tons. These figures are based on reports by producers in Australia, Canada, France French North Africa, Western Germany, Mexico, Peru and the United States. U. S. producers at the end of February held about 72 per cent of the world's total, or 267,190 tons. World output of refined lead in February was 123,472 tons, a decline of 15,887 tons from January. World refined deliveries to consumers came to 100,009 tons in February, compared with 124,052 tons in January, a decrease of 24,043 tons.

Zinc Market Steady

The zinc producers could do with an improvement in business but even with demand at only a moderate level, the undertone of the market remained steady. For the present there appeared to be no threat to the maintenance of the price at 11.00c a pound East St. Louis for the Prime Western grade. Most of the business currently placed has been at the average price for the month during which the metal is shipped.

The zinc statistics for March were pretty much in line with expectations. They showed increases in production, shipments and stocks over the preceding month. Following are the March statistics for zinc (all grades), in tons, with the January totals in parentheses: production, 79,918 (71,174); shipments to domestic consumers, 73,814 (65,641); stocks in producers' hands at end of month, 206,083 (200,461).

It appears that the high production is keeping the zinc market in a depressed state. By dropping the price from 11.50c to 11.00c a pound (on February 25), some factors had hoped that the move would result in curtailing output. The statistics show that production is mounting in spite of the low price level. Zinc producers, viewing the March figures, saw nothing in the situation to warrant any purchases in excess of their actual needs, and part of their needs were being met out of inventory. This accounts for the limited volume of business that makes its daily appearance, and also for the fact that the tendency on the part of consumers is to favor buying at the average rather than at the spot quotation.

Straits Tin Lower

Spot Straits tin at New York on April 10 was quoted at 102.50c a pound, compared with the 103.375c a pound for March 12 last quoted in this space. The high for the March 12-April 10 period was the 103.50c quoted on March 16, 17 and 18. The low for the period was the 102.375c for March 24, 25 and 31.

Bright Aluminum Outlook

Prospects for aluminum were depicted as bright by Bert Inch, vice president of Kaiser Aluminum and Chemical Corp. Speaking at the 41st annual convention of the National Association of Waste Material Dealers, Mr. Inch said total aluminum consumption of over 8 billion pounds can be expected by 1965, in terms of recent annual markets of about 4 billion pounds. Pointing out that the installed capacity of primary producers in 1959-60 is 2,600,000 tons, with 1965 just about five years away, Mr. Inch said "the gap . . . in metal supply that is domestically produced is something like 1,600,000 tons to be filled by possible further plant expansions and by secondary metal."

Pricewise, primary aluminum held steady on the basis of 26.80c a pound for the 30-pound ingot, 99.5 per cent plus grade, f.o.b.

Silver Steady

The New York silver price was steady during the month in review, holding at 91.375c an ounce level established on March 4 as the result of an increase of 0.25c an ounce.

Quicksilver Stronger

Spot quicksilver, very difficult to acquire, showed considerable strength. Spot metal was quoted at $239 to $240 per flask of 76 pounds on April 8, compared with the range of $222 to $226 per flask last quoted in this space. While domestic demand has not been pressing, a shortage of spot metal has developed.

Platinum Steady

Platinum was steady with refiners holding to their range of $77 to $80 an ounce, established on March 6. Some of the speculative metal in the dealer market has been taken off the market and dealers were not accepting less than $75 an ounce. Previously, they did business at $74. It was anticipated that the dealer price, as surplus metal disappears, will move up another $1 or so an ounce.

Cadmium Cut 15c Lb.

Wholesale prices of cadmium in commercial sticks were reduced 15.00c a pound on April 1 to $1.30 a pound. Cadmium of foreign origin has been selling in the domestic market at below $1.30 a pound.

Washington Report

(Continued from Page 5)

cumvent the quotas on lead and zinc metals.

Fluorspar Bill Hearings

A possible pattern for aid to hard-pressed metals industries was seen in a bill presented by Senator Gordon Allott (Rep., Colo.), for assistance to domestic fluorspar producers. The measure, on which hearings were held by the Senate Interior Committee, provides the mechanics by which the Interior Secretary would estimate domestic fluorspar needs, and then divide this up among domestic and foreign producers so that certain minimum prices are maintained by regulating on a quarterly basis the importation of this mineral.

U. S. Platinum Metals Use Declined 10% During '58

Washington — Consumption of platinum-group metals in the United States in 1958 indicated by sales to consuming industries, declined 10 per cent to about 620,000 ounces according to the Bureau of Mines, United States Department of the Interior. Sales of platinum decreased 28 per cent, but palladium sales rose 8 per cent and sales of iridium, osmium, rhodium, and ruthenium together increased 3 per cent over those of 1957. Imports of platinum-group metals in 1958 were 2 per cent below those of the preceding year.

Fourth-quarter sales of platinum by refiners and dealers to domestic consumers were 19 per cent higher than in the preceding quarter with increases recorded in all categories of consumption. Palladium sales were off 24 per cent from the high level of the third quarter due chiefly to the sharp drop in chemical requirements. The total quantity of iridium, osmium, rhodium and ruthenium sold for industrial and artistic consumption increased 36 per cent in the period. Significant increases were recorded in each use category.

Refining of platinum in the fourth quarter of 1958 was at a rate 134 per cent higher than in the third quarter, and imports of refined platinum (82,900 ounces) rose 53 per cent. Working stocks of refiners and dealers in process in transit or in-use rose moderately in the quarter but were about 12 per cent lower than at the end of 1957.

Refining of palladium in the fourth quarter was at a rate 169 per cent above that of the third quarter, but imports of refined palladium (81,600 ounces) were 40 per cent lower.

Daily Metal Quotations for March, 1959

The following quotations are taken from the Daily Metal Reporter•
(In Cents Per Pound)

MARCH	Copper					Tin		Lead		Zinc					Aluminum	Antimony	Silver
	Producers' Price Del. Conn.	Custom Smelters' or Outside Price	Electro f. o. b. Refinery	Lake Del.	Aver. Prompt Electrolytic Export Price F.a.s. N. Y.	Straits New York Spot	Straits New York Prompt	New York	Outside St. Louis	Prime West. f. o. b. E. St. Louis	Prime West. Del. N. Y.	Brass Spec. f. o. b. E. St. Louis	High Grade Delivered	Spec. High Grade Delivered	30-Lb. Ingot 99½% Plus (f. o. b.)	Domestic Spot 99.5% f.o.b. Laredo	(Cents Per Ounce) New York
2	30.00	31.00	30.10	30.00	31.00	104.50	104.50	11.00	10.80	11.00	11.50	11.25	12.00	12.25	26.80	29.00	91.125
3	30.00	31.50	30.35	30.00	31.50	104.00	104.00	11.00	10.80	11.00	11.50	11.25	12.00	12.25	26.80	29.00	91.125
4	30.00	32.00	30.60	30.00	32.00	103.50	103.50	11.00	10.80	11.00	11.50	11.25	12.00	12.25	26.80	29.00	91.375
5	30.00	32.00	30.60	30.00	32.00	103.50	103.00	11.50	11.30	11.00	11.50	11.25	12.00	12.25	26.80	29.00	91.375
6	30.00	32.00	30.60	30.00	32.00	102.00	102.00	11.50	11.30	11.00	11.50	11.25	12.00	12.25	26.80	29.00	91.375
9	31.50	32.00	31.35	31.50	32.00	101.875	101.875	11.50	11.30	11.00	11.50	11.25	12.00	12.25	26.80	29.00	91.375
10	31.50	N. Q.†	31.10†	31.50	33.00	102.75	102.75	11.50	11.30	11.00	11.50	11.25	12.00	12.25	26.80	29.00	91.375
11	31.50	N. Q.†	31.10†	31.50	33.00	103.375	103.375	11.50	11.30	11.00	11.50	11.25	12.00	12.25	26.80	29.00	91.375
12	31.50	N. Q.†	31.10†	31.50	32.25	103.375	103.375	11.50	11.30	11.00	11.50	11.25	12.00	12.25	26.80	29.00	91.375
13	31.50	N. Q.†	31.10†	31.50	32.25	103.25	103.25	11.50	11.30	11.00	11.50	11.25	12.00	12.25	26.80	29.00	91.375
16	31.50	34.00	32.35	31.50	33.50	103.50	103.50	11.50	11.30	11.00	11.50	11.25	12.00	12.25	26.80	29.00	91.375
17	31.50	34.00	32.35	31.50	33.75	103.50	103.50	11.50	11.30	11.00	11.50	11.25	12.00	12.25	26.80	29.00	91.375
18	31.50	34.00	32.35	31.50	33.75	103.50	103.50	11.50	11.30	11.00	11.50	11.25	12.00	12.25	26.80	29.00	91.375
19	31.50	34.00	32.35	31.50	33.25	103.375	103.375	11.50	11.30	11.00	11.50	11.25	12.00	12.25	26.80	29.00	91.375
20	31.50	34.00	32.35	31.50	33.00	103.00	103.00	11.50	11.30	11.00	11.50	11.25	12.00	12.25	26.80	29.00	91.375
23	31.50	34.00	32.35	31.50	32.75	102.75	102.75	11.50	11.30	11.00	11.50	11.25	12.00	12.25	26.80	29.00	91.375
24	31.50	34.00	32.35	31.50	32.75	102.375	102.375	11.50	11.30	11.00	11.50	11.25	12.00	12.25	26.80	29.00	91.375
25	31.50	34.00	32.35	31.50	32.75	102.375	102.375	11.50	11.30	11.00	11.50	11.25	12.00	12.25	26.80	29.00	91.375
26	31.50	34.00	32.35	31.50	32.75	102.75	102.75	11.50	11.30	11.00	11.50	11.25	12.00	12.25	26.80	29.00	91.375
30	31.50	34.00	32.35	31.50	33.25	102.75	102.75	11.50	11.30	11.00	11.50	11.25	12.00	12.25	26.80	29.00	91.375
31	31.50	34.00	32.35	31.50	33.25	102.375	102.375	11.50	11.30	11.00	11.50	11.25	12.00	12.25	26.80	29.00	91.375
AV.	**31.14**	**33.21**	**31.61**	**31.14**	**32.65**	**103.042**	**103.042**	**11.42**	**11.23**	**11.00**	**11.50**	**11.25**	**12.00**	**12.25**	**26.80**	**29.00**	**91.351**
HI.	**31.50**	**34.00**	**33.60**	**31.50**	**33.75**	**104.50**	**104.50**	**11.50**	**11.30**	**11.00**	**11.50**	**11.25**	**12.00**	**12.25**	**26.80**	**29.00**	**91.375**
LO.	**30.00**	**31.00**	**29.60**	**30.00**	**31.00**	**101.875**	**101.875**	**11.00**	**10.80**	**11.00**	**11.50**	**11.25**	**12.00**	**12.25**	**26.80**	**29.00**	**91.125**

• When split quotations prevail the daily average price is listed. The highs and lows for the month take into consideration the levels reached at both sides of such ranges.
† Custom smelters' not quoting.

Ziegfeld on Lead

(Continued from Page 12)

Enough for research at this time. Along with it will go a stepped-up program of technical service, promotion and advertising to industry. It is not enough to develop the best mousetrap in the world, because people just won't beat a path to your door unless you tell them about it. You not only have to tell them about it but you have to show them why it is best and how to use it to best advantage.

Therefore our staff of technical service engineers is being increased in order to work more effectively with users and potential users of lead and its products. A wealth of technical literature is being planned to acquaint industry with our products and how to use and specify them, which will supplement the published data already issued by us. And advertising in the trade and technical press is being used to inform large numbers of people of what an important part lead plays in modern technology.

Role of Lead Mines

Now there is an important role that lead miners can play in this program that won't cost them a nickel. Industrial concerns, including mining companies, are potential customers for certain lead products. Among these are lead-acid batteries for mine locomotives and industrial trucks, lead-base paints for protection of iron and steel against corrosion and for painting company owned buildings, either wood or metal, leaded greases for heavy-duty lubrication, leaded steels for free-machining, lead pipe and fittings for plumbing, lead lined tanks and lead pipe for handling corrosive acid solutions, just to name a few.

Therefore in making purchases for your own operations be sure that lead gets full and fair consideration in relation to competitive products. This isn't a case of "charity begins at home" because you will often find that lead is superior in performance and lower in over-all costs than some of the other materials that you may be using or might select.

Your efforts need not stop with your own operations. You probably have contacts with many other industrial organizations, with the municipalities in which you live and work, and with state and county officials. New materials often have a glamor about them that blinds buyers to the sturdy value of work horses like lead. Don't fail to remind such people of the virtues of lead.

There is a book we'd be glad to send you or your friends which goes into considerable detail about the many applications of lead. It is called "Lead in Modern Industry" and a line to us on a business letterhead will bring you a copy. In addition, we issue a lot of engineering literature about lead products. We'd be glad to put you or your friends in other concerns or government agencies on the mailing list to receive it. In this way you can help to stimulate full consideration of lead for those uses for which it is appropriate. I hope we may have your cooperation.

Glimpse Into Future

Now in conclusion, let's take a brief imaginative flight into the future and take a glimpse at some of the things lead may be doing a few years hence. It will probably continue to pay an increasingly important role in atomics where it is already finding considerable use as a gamma ray shield, particularly in radio-isotope containers, in laboratories using radio-active materials, and in mobile reactors like those for atomic ships.

Lead will undoubtedly continue to be a major ingredient of porcelain enamel for aluminum. This now involves only a few hundred tons of lead a year but this use was non-existent only a few years ago. The porcelain enamel industry forecasts continued rapid growth for this product, particularly in the architectural field. A recently issued patent for a similar lead-bearing, low-firing porcelain enamel for steel indicates a strong possibility for another new use for lead that could eventually be greater than in the enamels for aluminum because of lower costs and adaptability to products and markets not now open to porcelain enamels at all.

The electronics industry is one of our most rapidly growing and here again certain lead-bearing ceramics are finding increased application. In your new stereophonic hi-fi the chances are that the sound pick-up device contains two small elements made of lead titanate-zirconate. These weigh only a fraction of an ounce apiece and will never consume large tonnages of lead, but this principle of piezoelectrics—ability to convert mechanical to electrical energy or vice versa—could have many other applications as in supersonic washing machines and dish washers.

Impressed current non-sacrificial anodes to protect ships and the like from corrosion have just recently been getting favorable attention. The vibration attenuating properties of lead, long recognized as effective in building and printing press foundations, may well create a vastly expanded market as more engineering data becomes available.

I have already mentioned the future possibilities of some lead compounds to improve the efficiency of heating and refrigeration devices. Lead's superconducting properties are beginning to find use in counters, computers and the like. Electronic refrigerators of the future, without moving parts, may depend upon lead telluride's ability to cool under the influence of voltage change. Undoubtedly you saw a couple of weeks ago some of the great publicity given to the new 5-pound generator developed by the A. E. C. This most modern of devices depends upon the semi-conducting properties of lead telluride. Special pearlescent lead pigments are now being used to simulate mother of pearl and to improve movie screens.

These few examples have been cited merely to show that lead may well be a part of some of the most exciting technological developments of the future. We intend to see that, through our research and technical promotion, lead's interesting properties are fully exploited and that people should profitably "look ahead with lead."

British Metal Markets

(Continued from Page 14)

brighter showing than a good many people had anticipated, but events of the last few weeks have led to the uncomfortable conclusion that only some six months after their imposition the U. S. import quotas are being fully felt over here.

The G.o.b. supply position on the London market has grown definitely easier and the backwardation in prices has disappeared and it is noticeable that the increased rate of imports in the opening months of the year came not from any one source but from larger shipments by nearly all the supplying countries.

There is not much confidence felt, at the moment, that the proposed United Nations Conference at the end of April will be very much more successful than its predecessors in securing international agreement on limitation of supplies and as consumption generally is little better than static, the immediate outlook for prices cannot be regarded with any great optimism. It is true that Russia is selling in rather a restrained manner but overall the supply situation is expected to remain a fairly easy one. This is on the assumption that prices will not drop below £79 a ton, as, at around that figure, there is a tendency for ore supplies to the smelters to fall off pretty rapidly.

If the proposed legislation in Washington to make the U. S. import quotas more drastic proves successful, the situation over here is likely to take on an even gloomier tone, at any rate for the time being.

U. S. Mine Output of Gold in February Topped '58

Washington — Domestic mine production of recoverable gold in February dropped 10 per cent below January's output of 130,700 ounces, but was 12 per cent above the output of February 1958, according to preliminary figures compiled by the Bureau of Mines, United States Department of the Interior. All of the principal gold-producing States recorded lower production in per cent, compared with January as follows: Alaska, 77; Arizona, 12; California, 8; Colorado, 12; Montana, 7; Nevada, 49; South Dakota, 5; undistributed States (principally Washington), 8.

Copper Statistics Reported by Copper Institute

Combined Totals in U. S. A. and Outside U. S. A.

(In tons of 2,000 pounds)

	Crude Production		Refined	Deliveries to	Refined Stock	Stock Increases or Decreases		
	Primary	Secondary	Production	Customers	End of Period	Blister	Refined	Total
1957								
Total	2,897,719	123,270	3,035,588	2,853,307	458,340	—14,599	+103,920	+89,321
1958								
March	247,942	8,972	259,157	229,941	493,326	— 2,243	+23,579	+21,336
April	215,461	11,946	226,895	210,412	501,166	+ 512	+ 7,840	+ 8,352
May	218,387	11,190	225,771	212,993	498,516	+ 3,806	— 2,650	+ 1,156
June	214,283	11,414	228,387	240,825	476,823	— 2,540	—21,963	—24,233
July	216,315	9,516	229,578	220,801	475,164	— 3,747	— 1,659	— 5,406
August	224,673	9,474	217,914	247,116	436,476	+16,233	—38,688	—22,455
September	202,719	7,960	204,006	254,667	374,180	+ 6,673	—60,948	—54,275
October	204,938	20,613	192,199	292,630	269,654	+33,352	+105,126	—71,774
November	227,916	17,755	230,109	261,097	236,774	+15,562	—32,880	—17,318
December	253,512	8,883	282,191	260,841	258,874	—19,796	+22,100	+ 2,304
Total	2,707,926	138,696	2,805,622	2,916,588	258,874	+41,000	—199,466	—158,466
1959								
January	257,682	12,377	270,995	248,574	284,545	— 936	+22,001	+21,065
February	244,405	12,737	264,018	243,741	304,303	— 6,876	+19,578	+12,882
March	268,716	17,016	285,425	270,825	319,184	+ 307	+14,881	+15,188

In U. S. A.

1957								
Total	1,116,380	112,060	1,616,964	1,277,946	181,024	.....	+60,379	.....
1958								
February	87,130	6,222	128,299	93,784	201,223	.....	+24,936	.....
March	90,366	8,607	130,075	78,683	238,641	.....	+37,418	.....
April	86,123	11,475	120,467	81,930	251,099	.....	+12,458	.....
May	80,628	10,488	115,978	78,631	253,463	.....	+ 2,364	.....
June	71,092	10,980	107,918	100,796	244,450	.....	— 8,013	.....
July	64,444	8,858	110,130	77,523	242,781	.....	— 2,669	.....
August	67,917	8,999	100,640	86,982	215,560	.....	—27,221	.....
September	79,541	7,259	107,971	101,971	178,222	.....	—37,338	.....
October	92,214	19,865	113,288	120,793	128,490	.....	—49,732	.....
November	96,369	16,755	128,048	131,188	93,596	.....	—34,894	.....
December	97,641	7,911	146,978	116,310	80,722	.....	—100,302	.....
Total	1,008,170	131,294	1,446,540	1,179,416	00,722	.....	—12,874	.....
1959								
January	95,542	11,284	137,361	114,425	80,780	.....	+ 58	.....
February	88,432	11,425	142,235	120,134	85,523	.....	+ 4,743	.....
March	101,118	16,117	140,928	124,220	85,952	.....	— 2,751	.....

Outside U. S. A.*

1957								
Total	1,783,119	11,210	1,418,624	1,575,361	277,316	.....	+43,541	.....
1958								
February	143,586	284	119,263	130,925	268,524	.....	— 4,089	.....
March	157,606	365	129,082	151,258	254,685	.....	—13,839	.....
April	129,338	471	106,428	128,482	250,067	.....	— 4,618	.....
May	137,759	702	109,793	134,302	245,053	.....	— 5,014	.....
June	143,191	584	120,469	140,029	231,373	.....	—13,680	.....
July	151,871	658	119,448	143,278	232,383	.....	+ 1,010	.....
August	156,756	475	117,274	160,134	220,916	.....	—11,467	.....
September	123,178	701	96,035	153,633	196,558	.....	—23,610	.....
October	112,724	748	78,911	171,827	141,164	.....	—55,394	.....
November	131,334	980	102,061	129,909	143,178	.....	+ 2,014	.....
December	155,871	972	135,213	144,531	178,152	.....	+34,974	.....
Total	1,699,756	7,402	1,359,082	1,737,172	178,152	.....	—99,164	.....
1959								
January	162,140	1,093	133,634	134,149	203,765	.....	+21,943	.....
February	155,973	1,312	121,783	123,607	218,780	.....	+15,015	.....
March	167,598	899	144,497	146,605	236,232	.....	+17,452	.....

* Excluding Russia, Yugoslavia, Norway, Sweden, Japan and Australia.

Electrolytic Copper

Producers' Price, Del. Valley
Monthly Average Prices
(Cents Per Pound)

	1956	1957	1958	1959
Jan.	43.00	36.00	25.69	29.00
Feb.	44.03	33.318	25.00	29.972
Mar.	46.00	32.00	25.00	31.14
Apr.	46.00	32.00	25.00	....
May	46.00	32.00	25.00	....
June	46.00	30.955	25.36	....
July	41.56	29.25	26.125	....
Aug.	40.00	28.639	26.50	....
Sept.	40.00	27.031	26.50	....
Oct.	39.308	27.00	27.548	....
Nov.	36.00	27.00	29.00	....
Dec.	36.00	27.00	29.00	....
Aver.	41.992	30.183	26.31	....

Electrolytic Copper

Custom Smelters' Price, Del. Valley
Monthly Average Prices
(Cents Per Pound)

	1956	1957	1958	1959
Jan.	50.22	34.87	24.577	29.429
Feb.	52.07	32.273	23.557	30.361
Mar.	53.11	30.952	23.326	33.21
Apr.	48.88	31.24	23.66	....
May	44.221	30.163	23.865	....
June	40.00	29.60	25.52	....
July	38.14	28.39	29.231	....
Aug.	39.32	27.862	26.52	....
Sept.	39.00	25.948	26.355	....
Oct.	37.192	25.722	28.577	....
Nov.	35.95	25.435	29.829	....
Dec.	35.45	25.26	28.846	....
Aver.	42.797	28.93	25.905	....

Lake Copper

Producers' Price Delivered
Monthly Average Prices
(Cents Per Pound)

	1956	1957	1958	1959
Jan.	43.00	36.00	25.69	29.00
Feb.	43.783	33.182	25.00	30.00
Mar.	46.00	32.00	25.00	31.14
Apr.	46.00	32.00	25.00	....
May	46.00	32.00	25.00	....
June	46.00	30.955	25.00	....
July	41.68	29.25	25.75	....
Aug.	40.00	28.611	26.50	....
Sept.	40.00	27.00	26.50	....
Oct.	39.321	27.00	27.577	....
Nov.	36.00	27.00	29.00	....
Dec.	36.00	27.00	29.00	....
Aver.	41.975	30.162	26.251	....

Fabricators' Copper Statistics

(In tons of 2,000 pounds)

	Fabricators' Stocks of Refined Cop.	Unfilled Purchases of Refined by Fab. from Producers	Fabricators' Working Stocks	Unfilled Sales by Fabricators to Customers	Actual Copper Consmd. by Fabricators	Excess Fabricators' Stocks Over Orders Bkd.
1953						
Total	380,881	25,022	309,664	170,917	1,375,869	— 74,678
1954						
Total	360,526	58,125	304,619	136,581	1,231,840	— 22,549
1955						
Total	.....	.....	.....	.....	1,418,241	.....
1956						
July	465,015	109,040	334,584	220,810	81,275	+ 18,661
Aug.	457,679	115,295	338,818	221,975	117,427	+ 12,181
Sept.	445,679	114,981	338,488	204,154	115,867	+ 18,018
Oct.	440,706	112,893	336,856	198,517	119,440	+ 18,226
Nov.	436,216	110,792	335,829	178,814	119,441	+ 31,365
Dec.	437,187	117,601	336,217	183,834	99,223	+ 34,737
Total	.....	.....	.....	.....	1,416,378	.....
1957						
Jan.	435,635	107,231	335,944	178,326	119,517	+ 28,596
Feb.	422,266	110,174	334,542	178,913	114,298	+ 18,985
Mar.	429,410	104,551	338,454	164,623	106,170	+ 30,884
Apr.	429,708	98,638	335,921	164,410	117,041	+ 28,015
May	434,852	92,943	336,697	170,476	115,355	+ 20,622
June	426,905	82,919	340,743	153,042	110,527	+ 16,039
July	432,918	85,728	341,684	144,410	77,991	+ 32,552
Aug.	429,627	82,768	344,315	144,375	110,323	+ 23,826
Sept.	425,168	80,436	344,530	144,538	106,927	+ 16,536
Oct.	420,130	80,774	341,869	138,420	119,161	+ 20,615
Nov.	428,520	68,249	345,832	128,719	98,725	+ 22,218
Dec.	430,171	75,627	347,465	133,631	83,067	+ 19,702
Total	.....	.....	.....	.....	1,279,086	.....
1958						
Jan.	445,514	57,917	348,426	123,756	94,642	+ 31,249
Feb.	452,673	52,342	351,035	128,330	86,625	+ 25,650
Mar.	448,125	71,693	346,875	141,387	83,694	+ 31,556
Apr.	450,442	76,602	347,607	145,623	79,613	+ 33,814
May	441,001	78,194	346,404	138,190	88,447	+ 34,601
June	433,526	72,383	330,301	145,162	109,011	+ 30,448
July	431,796	77,362	326,263	153,529	79,353	+ 29,366
Aug.	421,931	78,194	323,667	150,436	96,717	+ 26,022
Sept.	416,887	71,025	319,281	145,390	105,474	+ 28,941
Oct.	399,113	91,019	315,929	156,692	138,017	+ 17,511
Nov.	419,914	88,580	328,238	157,799	110,487	+ 22,457
Dec.	447,123	90,401	326,438	177,869	92,573	+ 35,217
Total	....	....	....	....	1,165,364	....
1959						
Jan.	457,387	101,182	337,761	172,698	108,556	+ 44,070
Feb.	459,046	123,321	390,522	183,113	116,565	+ 58,732

Scrap Copper Receipts by Custom Smelters and Refineries in United States*

(In Short Tons)

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959
Jan.	15,763	6,640	4,528	6,486	9,859	11,047	14,322	17,506	16,024	14,511
Feb.	12,500	5,153	3,633	10,337	8,490	15,198	14,497	11,145	9,518	14,712
Mar.	13,538	7,912	5,243	19,991	9,738	12,198	15,921	13,934	11,783	19,522
Apr.	12,304	8,553	6,214	16,583	9,004	13,162	17,233	14,288	15,279	....
May	8,749	8,458	8,033	10,857	8,687	15,133	20,805	12,397	13,989	....
June	20,523	8,628	4,425	10,945	13,309	14,765	14,758	11,949	13,945	....
July	10,040	6,642	5,188	9,063	10,260	9,988	12,632	8,926	12,185	....
Aug.	10,452	6,113	5,003	7,137	10,100	12,197	12,510	11,645	11,896	....
Sept.	4,903	3,561	4,667	9,042	10,641	15,037	9,518	9,756	9,268	....
Oct.	9,459	3,336	4,602	10,065	11,662	12,897	15,570	13,151	23,088	....
Nov.	9,237	3,179	4,724	7,815	10,879	9,865	11,369	11,146	16,425	....
Dec.	7,178	4,538	6,208	11,476	14,876	13,180	14,613	11,237	10,796	....
Total	142,067	71,812	62,470	129,798	127,449	154,714	173,748	147,080	164,196	....

* As compiled by Copper Intitute.

Brass and Bronze Ingot Monthly Shipments

(NET TONS

The following figures showing the combined shipments of ingot brass and bronze are compiled by the Ingot Brass and Bronze Industry and represent in excess of 95 per cent of the deliveries of the entire industry.

	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959
Jan.	19,456	18,874	28,416	28,315	23,423	20,661	25,201	27,736	25,681	20,468	22,046
Feb.	15,026	18,487	27,168	24,211	25,429	19,920	25,349	24,949	20,769	17,413	23,746
Mar.	14,550	22,494	31,997	23,890	28,256	23,653	29,713	28,310	21,948	18,825	26,109
Apr.	10,695	22,118	30,473	22,547	25,044	24,746	27,641	25,808	23,507	18,009	....
May	11,114	23,643	33,267	21,740	21,660	22,269	23,708	23,437	22,037	17,191	....
June	9,696	25,093	33,817	21,274	20,818	22,348	23,141	18,842	18,888	17,962	....
July	10,220	21,609	32,016	18,947	19,321	17,074	18,513	17,364	16,695	16,658	....
Aug.	14,194	29,689	25,285	21,807	20,156	21,684	27,013	23,812	19,654	17,882	....
Sept.	16,208	28,811	22,285	22,770	21,463	22,464	26,349	20,929	19,670	20,540	....
Oct.	18,026	32,240	23,124	25,811	22,280	24,080	25,228	23,045	22,800	23,225	....
Nov.	18,488	31,748	23,544	23,441	21,806	23,061	25,102	21,818	19,767	20,758	....
Dec.	17,950	28,575	20,987	22,983	20,541	21,274	21,448	18,046	16,875	18,676	....
Total	175,643	303,563	332,378	277,736	271,251	263,233	298,406	274,096	248,297	227,607	....
Aver.	14,637	25,297	27,615	23,145	22,694	21,936	24,867	22,841	20,681	18,133	....

Mine Production of Copper in United States

(U. S. Bureau of Mines)
(In short tons)

	Eastern	Missouri	Western	Total
1956				
Ttl.	79,681	2,130	1,018,496	1,100,307
1957				
Aug.	7,572	133	79,892	87,038
Sept.	6,083	132	79,623	85,338
Oct.	4,614	147	82,992	87,753
Nov.	7,063	70	80,848	87,981
Dec.	6,962	67	81,080	88,109
Ttl.	79,369	1,800	995,753	1,076,922
1958				
Jan.	7,615	164	82,476	90,255
Feb.	6,826	125	74,766	81,717
Mar.	7,517	123	79,594	87,234
April	7,035	161	76,911	84,107
May	6,522	152	71,717	78,391
June	5,801	155	62,296	68,252
July	4,188	132	56,672	61,222
Aug.	5,570	127	61,342	67,039
Sept.	5,312	114	77,561	82,987
Oct.	7,002	60	85,075	91,518
Nov.	6,617	60	87,379	94,056
Dec.	6,614	70	88,070	94,514
Ttl.	76,849	1,250	902,021	980,304
1959				
Jan.	6,590	126	90,386	97,102
Feb.	5,883	130	84,303	90,376

Average Custom Smelters' Scrap Buying Prices

(Cents per pound for carload lots del. consumers' works)

	No. 1 Copper Scrap	No. 2 Copper Scrap	Light Copper Scrap	Refinery Brass*
1958				
Jan.	19.44	17.94	15.69	17.70
Feb.	18.955	17.455	15.205	16.932
Mar.	19.21	17.71	15.46	16.92
Apr.	19.60	18.10	15.85	17.56
May	20.02	18.52	16.27	17.894
June	21.93	20.43	18.18	19.76
July	22.52	21.02	18.77	20.26
Aug.	22.62	21.12	18.87	20.12
Sept.	22.37	20.87	18.62	19.87
Oct.	24.80	23.30	21.05	22.30
Nov.	25.597	24.097	21.847	23.097
Dec.	24.356	22.856	20.606	21.856
Aver	21.788	20.282	18.035	18.047
1959				
Jan.	25.29	23.79	21.54	22.79
Feb.	26.42	24.92	22.67	24.11
Mar.	28.79	27.29	25.04	26.79

*Of dry content for material having a dry copper content in excess of 60%.

Brass Ingot Makers' Scrap Copper Buying Prices

(Average Prices)
(Cents per pound del. refinery for 60,000 lbs. of each grade)

	No. 1 Copper Scrap	No. 2 Copper Scrap	No. 1 Composition	Heavy Yellow Brass
1958				
Jan.	19.44	17.94	17.77	12.19
Feb.	18.955	17.455	17.06	11.341
Mar.	19.21	17.71	17.274	11 88
Apr.	19.60	18.10	17.75	12.35
May	19.923	13.423	18.038	12.769
June	21.93	20.43	19.02	13.43
July	22.52	21.02	19.24	13.53
Aug.	22.62	21.12	19.11	13.80
Sept.	22.37	20.87	18.88	12.90
Oct.	24.80	23.30	20.51	14.938
Nov.	25.597	24.097	20.182	14.125
Dec.	24.356	22.856	19.038	13.038
Aver.	21.777	20.277	18.653	13.024
1959				
Jan.	25.29	23.79	19.70	13.982
Feb.	26.42	24.92	21.08	15.08
Mar.	28.79	27.29	22.85	16.85

Lead Statistics Reported by American Bureau of Metal Statistics

Lead Refineries in U. S. A. and Outside U. S. A.

(Recoverable Lead Content in Tons of 2,000 Pounds)

Combined U. S. A. and Outside U. S. A.

	REFINED PRODUCTION			DELIVERIES			STOCKS		
1958	Pig	Antimonial Lead Content	Total	Pig	Antimonial Lead Content	Total	Pig	Antimonial Lead Content	Total
May ..	135,618	8,918	144,536	109,209	8,540	117,749	266,326	20,218	286,544
June ..	127,982	7,484	135,466	105,121	8,493	113,614	285,482	19,209	304,691
July ..	109,964	8,233	118,197	107,801	9,252	117,053	284,650	18,190	302,840
Aug. ..	103,701	8,973	112,674	102,898	9,903	112,801	284,818	17,260	302,078
Sept. ..	116,283	8,806	125,089	121,929	7,986	129,915	279,172	18,080	297,252
Oct. ..	121,934	10,656	132,590	139,698	9,408	149,106	262,510	19,328	281,838
Nov. ..	120,951	8,971	129,922	112,495	9,381	121,876	273,033	18,918	291,951
Dec. ..	129,461	10,898	140,359	90,498	8,583	99,081	313,232	21,233	334,465
Total ..	1,485,282	106,383	1,591,665	1,307,390	102,697	1,410,087	.....	.....	.....
1959									
Jan. ..	129,604	9,755	139,359	114,038	10,014	124,052	328,719	20,974	349,693
Feb. ..	114,528	8,944	123,472	90,915	9,094	100,009	347,455	20,824	368,279
U. S. A.									
1958									
May ..	42,659	4,481	47,140	45,576	4,118	49,694	182,187	13,892	196,079
June ..	40,795	3,600	44,395	45,640	4,409	50,049	193,021	13,298	206,319
July ..	36,052	2,681	38,733	47,381	5,263	52,644	200,949	11,027	211,976
Aug. ..	34,275	4,890	39,165	50,145	4,956	55,101	201,759	11,150	212,909
Sept. ..	38,508	4,525	43,033	65,301	4,516	69,817	215,389	11,991	227,380
Oct. ..	40,225	5,153	45,378	70,580	4,455	75,035	207,335	12,728	220,063
Nov. ..	36,572	3,621	40,193	44,834	4,181	49,015	217,728	12,352	230,080
Dec ..	39,504	4,307	43,811	31,869	3,737	35,606	239,049	13,417	252,466
Total ..	473,208	46,985	520,193	589,528	49,893	639,421	.....	.....	.....
1959									
Jan. ..	40,110	3,365	43,475	48,311	4,492	52,803	244,870	12,426	257,296
Feb. ..	35,084	4,145	39,229	40,881	4,073	44,954	254,229	12,961	267,190
Outside U. S. A.									
1958									
May ..	92,959	4,437	97,396	63,633	4,422	68,055	84,139	6,326	90,465
June ..	87,187	3,884	91,071	59,481	4,084	63,565	92,461	5,911	98,372
July ..	73,912	5,552	79,464	60,420	3,989	64,409	83,701	7,163	90,864
Aug. ..	69,426	4,083	73,509	52,753	4,947	57,700	83,059	6,110	89,169
Sept. ..	77,775	4,281	82,056	56,628	3,470	60,098	63,783	6,089	69,872
Oct. ..	81,709	5,503	87,212	69,118	4,953	74,071	55,175	6,600	61,775
Nov. ..	84,379	5,350	89,729	67,661	5,200	72,861	55,305	6,566	61,871
Dec. ..	89,957	6,591	96,548	58,629	4,846	63,475	74,183	7,816	81,999
Total ..	1,012,074	59,398	1,071,472	717,862	52,804	710,666	.....	.....	.....
1959									
Jan ..	89,494	6,390	95,884	65,727	5,522	71,249	83,849	8,548	92,397
Feb. ..	79,444	4,799	84,243	50,034	5,021	55,055	93,226	7,863	101,089

Summary of Lead Statistics for United States

	Recoverable Lead Content In Tons of 2000 Pounds	Stocks (end of period) — Base Bullion — Raw Material at Smelter	At Smelter & Transit	At Refinery and Process	Refined Pig and Antimonial	Total	Smelter Receipts — Primary Origin — U.S.A.	Outside U.S.A.	Scrap	Total
1958										
May	76,981	5,785	27,472	196,079	306,317	28,637	10,445	1,971	41,053	
June	77,858	4,420	28,254	206,319	316,851	30,230	14,022	1,315	45,567	
July	81,103	4,848	30,065	211,976	327,992	23,440	19,665	1,629	44,734	
August ...	75,116	4,794	33,863	212,909	326,682	23,898	13,145	1,269	38,312	
September .	70,290	4,948	32,606	227,380	335,224	21,775	14,937	1,673	38,385	
October	58,863	4,773	29,833	220,063	313,532	19,630	9,205	3,699	32,534	
November ;.	60,222	3,573	30,208	230,080	324,083	23,603	15,932	3,869	43,404	
December ..	68,197	4,489	28,955	252,466	354,107	25,544	18,921	4,090	43,555	
Total	....	....	....	.....	.....	297,687	191,415	29,080	518,182	
1959										
January ...	69,015	4,243	31,577	257,296	362,131	24,931	19,185	3,167	47,283	
February ..	58,921	2,919	35,062	267,190	364,092	22,934	8,435	1,772	33,141	

	Smelter Production	Refined Productions — Pig	Antimonial	Total	Deliveries to U. S. Fabricators including imports from sources reporting to ABMS — Pig	Antimonial	Total
1958							
May	46,653	42,659	4,481	47,140	45,576	4,118	49,694
June	43,662	40,795	3,600	44,395	45,640	4,409	50,049
July	40,328	36,052	2,681	38,733	47,381	5,263	52,644
August	41,099	34,275	4,890	39,165	50,145	4,956	55,101
September	42,473	38,508	4,525	43,033	65,301	4,516	69,817
October	41,975	40,225	5,153	45,378	70,580	4,455	75,035
November	41,365	36,572	3,621	40,193	44,834	4,181	49,015
December	39,972	39,504	4,307	43,811	31,869	3,737	35,606
Total	512,323	473,208	46,985	520,193	589,528	49,893	639,421
1959							
January	45,938	40,110	3,365	43,475	48,311	4,492	52,803
February	40,655	35,084	4,145	39,229	40,881	4,073	44,954

United States Lead Statistics of Primary Refineries

(American Bureau of Metal Statistics)
(In tons of 2,000 lbs.)

	Stock At Beginning	Production Primary & Secondary	Total Supply	Stock At End	Domestic Shipments
1954	81,152	551,618	632,770	92,719	475,551
1955	28,855	547,153	639,872	31,089	531,339
1956					
Total	....	613,293	644,382	....	529,484
1957					
May	57,444	51,718	109,162	58,085	35,334
June	58,085	48,203	106,288	64,861	37,257
July	64,861	47,100	111,961	68,009	38,582
August	68,009	48,191	116,200	60,633	49,406
September	60,633	50,436	111,069	54,682	51,859
October	54,682	52,041	106,723	59,041	40,447
November	59,041	48,771	107,812	70,874	32,193
December	70,874	50,500	121,374	91,598	24,108
Total	....	604,353	645,534	....	463,060
1958					
January	91,598	47,665	139,263	101,206	33,422
February	101,206	47,133	148,339	119,522	23,832
March	119,522	43,441	162,963	128,754	28,885
April	128,754	40,984	169,738	143,136	22,172
May	143,136	47,487	190,623	155,121	30,021
June	155,121	44,636	199,757	163,504	32,078
July	163,504	38,827	202,331	164,860	31,948
August	164,860	39,520	204,380	169,302	34,254
September	169,302	43,269	212,571	170,666	41,657
October	170,666	45,467	216,133	169,435	46,647
November	169,435	40,485	209,920	179,321	30,591
December	179,321	44,042	223,363	198,538	24,852
Total	....	522,956	614,554	....	380,359
January	198,508	43,652	242,160	208,874	33,035
February	208,874	39,498	248,372	214,946	30,685

In instances where the figures are not in balance it is due to shipments to other than domestic consumers.

Industrial Classification of Domestic Lead Shipments

(American Bureau of Metal Statistics) (In tons of 2,000 lbs.)

	Cable	Amm.	Foil	Batt'y	Brass Making	Sundries	Jobbers	Unclassified
1955								
Total	72,418	27,599	2,622	88,461	3,960	52,994	13,034	270,251
1956								
Aug.	7,712	1,497	85	6,234	713	4,443	1,262	26,358
Sept.	6,354	1,850	135	6,203	230	5,038	1,339	26,270
Oct.	7,988	1,715	135	7,108	286	4,955	1,493	21,574
Nov.	6,096	2,351	....	8,556	226	5,573	792	23,755
Dec.	6,440	1,449	85	5,832	160	7,258	394	22,573
Total	80,360	24,501	1,435	70,614	3,158	56,851	13,213	274,716
1957								
Jan.	5,297	2,800	200	6,886	671	4,002	1,191	19,502
Feb.	5,103	1,450	350	6,549	508	4,820	625	18,112
Mar.	5,956	752	...	6,479	686	4,614	1,064	18,674
April	6,731	2,250	....	6,242	909	2,958	1,040	17,453
May	6,976	2,200	120	4,705	270	3,871	634	16,558
June	3,726	2,250	75	3,762	666	5,071	1,087	20,620
July	5,249	1,650	105	5,332	566	5,310	1,110	19,260
Aug.	5,406	2,250	220	6,165	650	6,246	1,403	27,066
Sept.	4,880	2,700	295	6,722	850	5,782	891	29,739
Oct.	3,671	3,300	205	5,973	881	4,203	847	21,367
Nov.	2,950	2,500	85	3,126	493	3,800	706	18,533
Dec.	2,499	1,350	36	2,820	270	2,607	529	13,997
Total	58,444	25,452	1,691	64,761	7,420	53,284	11,127	240,881
1958								
Jan.	2,938	550	70	4,775	521	5,173	801	18,594
Feb.	2,899	1,750	70	5,124	90	1,643	888	11,368
Mar.	3,133	1,200	35	4,711	681	3,149	908	15,068
April	3,207	900	70	3,138	580	2,831	533	10,913
May	3,216	1,850	35	4,671	866	3,071	1,027	15,285
June	3,463	1,950	35	2,767	480	4,217	1,716	17,450
July	3,169	1,250	275	3,936	515	4,157	1,052	17,594
Aug.	3,481	2,415	70	4,992	400	6,399	100	16,397
Sept.	4,132	2,290	320	5,775	848	6,771	1,747	19,774
Oct.	3,243	2,450	...	4,548	285	6,210	1,641	28,270
Nov.	3,690	2,150	50	6,527	360	4,887	822	12,105
Dec.	2,267	2,100	50	6,216	215	2,578	652	10,774
Total	38,838	20,855	1,080	57,180	5,841	51,086	11,882	193,592
Jan.	2,284	2,100	100	5,594	161	3,545	727	18,524
Feb.	2,988	1,225	50	5,254	735	2,706	931	16,796

Lead Prices at New York

(Common Grade)
Monthly Average Prices
(Cents per pound)

	1956	1957	1958	1959
Jan.	16.16	16.00	13.00	12.619
Feb.	16.00	16.00	13.00	11.583
Mar.	16.00	16.00	13.00	11.42
Apr.	16.00	16.00	12.00	....
May	16.00	15.385	11.712	....
June	16.00	14.32	11.24	....
July	16.00	14.00	11.00	....
Aug.	16.00	14.00	10.85	....
Sept.	16.00	14.00	10.89	....
Oct.	16.00	13.704	12.673	....
Nov.	16.00	13.50	13.00	....
Dec.	16.00	13.00	13.00	....
Aver.	16.013	14.66	12.114	....

Lead Sheet Prices

(To Jobbers, Full Sheets)
Monthly Average Prices)
(Cents per pound)

	1956	1957	1958	1959
Jan.	21.66	21.50	18.50	18.119
Feb.	21.50	21.50	18.50	17.083
Mar.	21.50	21.50	18.50	16.92
Apr.	21.50	21.50	17.50	....
May	21.50	20.885	17.212	....
June	21.50	19.82	16.74	....
July	21.50	19.82	16.50	....
Aug.	21.50	19.50	16.35	....
Sept.	21.50	19.50	16.39	....
Oct.	21.50	19.204	18.173	....
Nov.	21.50	19.00	18.50	....
Dec.	21.50	18.50	18.50	....

Battery Shipments

The following table shows replacement battery shipments in the United States as compiled by the Business Information Division of Dun & Bradstreet, Inc., for the Association of American Battery Manufacturers:

(In thousands of units)

	1956	1957	1958	1959
Jan.	2,058	2,638	2,004	2,672
Feb.	1,340	1,961	1,803	1,803
Mar.	1,348	1,254	1,577	....
Apr.	1,368	1,178	1,242	....
May	1,761	1,605	1,454	....
June	1,807	1,878	1,773	....
July	2,178	2,469	2,101	....
Aug.	2,571	2,856	2,333	....
Sept.	2,711	2,688	2,704	....
Oct.	3,015	3,042	2,976	....
Nov.	2,592	2,359	2,262	....
Dec.	2,265	2,015	3,036	....
Total	25,014	25,943	25,265	....

Lead Stocks at Primary U. S. Smelters and Refiners

(American Bureau of Metal Statistics)
(In tons of 2,000 lbs.)

	In ore and matte and in process at smelteries	—In base bullion (lead content)— At smelteries & refineries	In transit to refineries	In process at refineries	Refined pig lead	Anti-monial lead	Total Stocks
1957							
Jan. 1..	77,918	12,222	2,846	25,092	29,435	11,746	159,249
Feb. 1..	80,451	10,636	4,061	25,827	32,418	10,487	163,880
Mar. 1..	81,274	11,880	4,394	25,728	38,479	10,220	171,975
Apr. 1..	82,461	14,598	3,593	25,401	36,390	9,794	172,237
May 1..	81,061	17,035	2,705	20,890	48,053	9,391	179,135
June 1..	81,364	11,585	3,071	21,002	48,286	9,799	175,107
July 1..	82,730	12,036	3,560	22,380	55,358	9,503	185,567
Aug. 1..	97,111	11,479	2,532	22,917	59,348	8,661	202,048
Sept. 1.	84,205	13,029	2,667	22,439	51,080	9,553	182,973
Oct. 1..	80,662	11,905	3,175	20,351	44,467	10,215	170,775
Nov. 1..	76,230	14,220	2,538	18,695	47,460	11,581	170,724
Dec. 1..	65,341	11,646	3,547	21,867	59,755	11,119	173,275
1958							
Jan. 1..	79,362	11,019	2,779	23,154	79,741	11,857	207,912
Feb. 1..	79,738	11,510	3,678	24,535	88,517	12,689	220,667
Mar. 1..	79,588	9,546	3,670	22,834	107,213	12,309	235,250
Apr. 1..	83,185	10,692	2,187	21,766	116,610	12,144	246,584
May 1..	86,053	11,838	2,138	20,524	130,668	12,468	263,689
June 1..	79,482	11,059	2,010	20,188	141,967	13,154	267,860
July 1..	80,060	9,012	1,570	22,092	150,648	12,856	276,238
Aug. 1..	83,347	12,438	860	21,615	154,378	10,482	283,379
Sept. 1.	77,416	14,767	1,176	20,444	158,413	10,889	283,105
Oct. 1..	72,724	14,797	2,223	18,125	159,662	11,004	278,535
Nov. 1..	61,819	11,492	1,086	19,041	157,385	12,050	262,873
Dec. 1..	62,960	11,072	1,565	20,941	167,493	11,828	275,859
1959							
Jan. 1..	72,378	10,917	1,767	19,746	185,913	12,595	303,316
Feb. 1..	72,832	10,565	1,889	21,317	197,085	11,789	315,477
Mar. 1..	62,383	11,707	1,447	21,479	202,835	12,111	311,962

Receipts of Lead in Ore and Scrap

By U. S. Smelters (a)

(American Bureau of Metal Statistics) (In tons of 2,000 lbs.)

	——Receipts of lead in ore—— United States	Foreign	Total	Receipts of lead in scrap etc. (b)	Total receipts in ore, & scrap
1953 Total	351,183	155,788	506,971	42,994	549,965
1954 Total	336,291	158,081	494,372	49,864	544,236
1955 Total	341,595	172,966	514,561	42,996	557,557
1956					
Total	368,499	192,318	560,817	55,925	616,792
1957					
January	30,632	19,961	50,593	4,471	55,064
February	31,410	15,059	46,469	4,564	51,033
March	33,445	18,813	52,258	3,058	55,316
April	31,343	13,042	44,385	2,848	47,233
May	32,138	12,324	44,462	3,431	47,893
June	29,896	19,592	49,488	2,272	51,760
July	29,585	17,936	47,521	2,893	50,414
August	29,225	18,774	47,999	3,190	51,189
September	26,479	13,757	40,236	4,375	44,611
October	29,342	13,782	43,124	4,386	47,510
November	25,809	17,251	43,060	3,258	46,318
December	27,105	26,610	53,715	3,791	57,506
Total	356,409	206,901	563,310	42,537	605,847
1958					
January	25,537	22,097	47,634	3,507	51,141
February	23,789	16,400	40,189	2,184	42,373
March	21,735	20,038	41,773	3,154	44,927
April	25,104	15,821	40,925	1,913	42,838
May	27,427	10,228	37,655	1,867	39,522
June	28,577	13,811	42,388	1,366	43,754
July	22,289	19,692	41,891	1,615	43,596
August	22,984	13,043	36,027	1,252	37,279
September	20,654	14,576	35,230	1,765	36,995
October	18,678	9,093	27,771	3,577	31,348
November	24,024	14,541	38,565	3,933	42,498
December	24,366	18,804	43,170	3,982	47,152
Total	285,164	188,144	473,308	30,115	503,423
1959					
January	24,304	19,449	43,753	3,138	46,891
February	22,253	8,660	30,913	1,747	32,660

(a) Receipts of lead in ore are computed on the basis of recoverable lead. Owing to the estimational factor in this, which is probably on the low side, and also to the possibility that some lead receipts may escape attention, these monthly totals probably underrun the actual production of pig lead. (b) inclusive only of scrap smelted in connection with ore, plus some scrap received by primary refiners.

N. Y. Lead Price Changes

(Effective Date)

1951		Apr. 1	13.75
Oct. 2	**19.00	Apr. 12	14.00
1952		June 2	14.25
Apr. 29	18.00	June 15	14.00
May 2	17.00	Aug. 25	14.25
May 12	15.00	Sept. 7	14.50
June 23	15.50	Sept. 15	14.75
June 24	16.00	Oct. 4	14.875
Oct. 7	15.00	Oct. 5	15.00
Oct. 14	14.00	1955	
Oct. 22	13.50	Sept. 23	15.00-15.50
Nov. 3	14.00	Sept. 26	15.50
Nov. 10	14.20	Dec. 29	16.00
Nov. 11	14.50	1956	
Nov. 20	14.25	Jan. 4	16.50
Nov. 24	14.00	Jan. 13	16.00
Dec. 22	14.25	1957	
Dec. 29	14.50	May 9	15.50
Dec. 31	14.75	May 16	15.00
1953		June 11	14.00
Jan. 7	14.50	Oct. 14	13.50
Jan. 12	14.00	Dec. 2	13.00
Feb. 2	13.50	1958	
Mar. 4	13.90	Apr. 1	12.00
Mar. 10	13.50	May 14	11.50
Apr. 7	13.00	June 3	11.00
Apr. 16	12.50	June 18	11.50
Apr. 21	12.00	July 1	11.00
Apr. 29	12.50	Aug. 13	10.75
May 18	12.75	Sept. 17	11.00
May 19	13.00	Sept. 30	11.50
May 26	13.15	Oct. 2	12.00
June 11	13.50	Oct. 8	12.50
July 20	13.75	Oct. 14	13.00
July 23	14.00	1959	
Sept. 16	13.50	Jan. 21	12.00
1954		Feb. 11	11.50
Jan. 18	13.00	Feb. 24	11.00
Feb. 18	12.50	Mar. 5	11.50
Mar. 9	12.75	April 1	11.00
Mar. 10	13.00	April 20	11.50
Mar. 26	13.25		
Mar. 29	13.50		

**OPS Ceiling.

Antimonial Lead Stocks at Primary Refineries

(A.B.M.S.)

(In tons of 2,000 pounds)

End of	1956	1957	1958	1959
Jan.	8,389	10,487	12,689	11,789
Feb.	9,095	10,220	12,309	12,111
Mar.	10,289	9,794	12,144	....
Apr.	10,690	9,391	12,468	....
May	10,902	9,799	13,154	....
June	9,452	9,503	12,856	....
July	10,924	8,661	10,482	....
Aug.	10,074	9,553	10,889	....
Sept.	11,181	10,215	11,004	....
Oct.	11,382	11,581	12,050	....
Nov.	11,832	11,119	11,828	....
Dec.	11,746	11,857	12,595	....

Antimonial Lead Production by Primary Refineries

(A.B.M.S.)

(In tons of 2,000 pounds)

End of	1956	1957	1958	1959
Jan.	5,045	5,113	3,743	3,541
Feb.	5,888	5,468	3,657	4,415
Mar.	5,526	5,091	3,527	....
Apr.	5,818	6,183	3,655	....
May	5,405	6,978	4,827	....
June	4,456	4,466	3,992	....
July	3,853	5,372	2,775	....
Aug.	5,343	7,967	5,244	....
Sept.	6,709	7,574	4,761	....
Oct.	5,378	6,148	5,849	....
Nov.	6,993	3,791	3,913	....
Dec.	5,766	3,290	4,539	....
Total	66,180	67,541	50,482	....

Lead Imports and Exports By Principal Countries

(A. B. M. S.)

Reported in pigs, bars, etc.; metric tons except where otherwise noted.

	1958 Nov.	1958 Dec.	1959 Jan.
IMPORTS			
U. S.† (s.t.)	19,929	32,833	16,979
Canada (s.t.)	45	...	...
Belgium	1,028	...	...
Denmark	2,416	1,083	...
France	3,498	3,677	3,858
Germany, W.††	3,877	...	...
Italy‡	823	...	...
Netherlands	2,582	3,275	2,773
Norway	923	1,380	..
Sweden	977	675	...
Switzerland	1,955	1,479	1,719
U. K. (l.t.)	9,915	23,248	19,621
India* (l.t.)	1,905	2,749	...
EXPORTS			
U. S.† (s.t.)	27	34	277
Canada (s.t.)	10,641	11,352	5,034
Belgium	4,981	...	...
Denmark	1,198	600	...
France	2,207	2,268	2,310
Germany, W.††	2,231	...	...
Italy‡	290	...	...
Netherlands	409	234	343
Sweden	2,565	451	...
Northern Rhodesia* (l.t.)	1,135	832	...
Australia* (l.t.)	13,009	8,651	...

† Refined.
†† Includes scrap.
‡ Includes lead alloys.
* British Bureau of Non-Ferrous Metal Statistics.

French Lead Imports

(A. B. M. S.)

(In metric tons)

	1958 Dec.	1959 Jan.	1959 Feb.
Ore, (gr. wt.)	7,754	6,876	9,529
Algeria	438	...	...
Morocco	6,369	5,976	9,529
Fr. Eq. Africa	947	900	...
Pig lead	3,677	3,858	692
Belgium	95	...	46
Germany (W.)	...	...	17
Netherlands	...	...	1
Algeria	5	1	12
Morocco	1,813	1,151	403
Tunisia	1,764	2,447	202
Australia	...	254	...
Other countries	...	5	11
Antimonial lead	36	32	22

U. K. Lead Imports

(British Bureau of Non-Ferrous Metal Statistics)

(In tons of 2,240 lbs.)

	1958 Dec.	1959 Jan.	1959 Feb.
(Gross Weight)			
Lead and lead alloys	23,248	19,621	8,479
Australia	14,768	10,131	2,530
Canada	7,363	7,456	4,482
Belgium	575	103	100
Peru	...	...	100
Other countries	542	1,931	1,267

U. S. Lead Consumption

(Bureau of Mines — In Short Tons)

	Prelim-inary Totals 1958	Dec. 1958	Jan. 1959
Metal Products:			
Ammunition	40,202	3,265	3,569
Bearing metals	18,448	1,699	1,683
Brass and bronze	19,646	1,857	1,789
Cable covering	74 535	6,185	5,287
Calking lead	66,234	4,782	5,472
Casting metals	7,702	552	784
Collapsible tubes	7,710	1,136	384
Foil	4,567	184	86
Pipes, traps & bends	21,776	1,857	1,722
Sheet lead	24,682	2,324	2,152
Solder	57,241	4,603	5,481
Storage Batter grids, posts etc.	154,828	15,399	15,011
Storage battery oxides	152,845	14,603	15,943
Terne metal	1,525	115	151
Type metal	26,313	2,299	2,058
Total	**678,254**	**60,860**	**61,572**
Pigments:			
White lead	12,658	833	753
Red lead & litharge	63,816	5,153	4,097
Pigment colors	11,853	963	884
Other*	4,357	458	411
Total	**92,684**	**7 407**	**6,145**
Chemicals:			
Tetraethyl lead	158,302	11,738	16,108
Misc. chemicals	2,791	342	310
Total	**161,093**	**12,080**	**16,418**
Miscellaneous uses:			
Annealing	4,354	393	394
Galvanizing	1,067	87	90
Lead plating	125	8	23
Weights & ballast	5,887	365	538
Total	**11,433**	**853**	**1,045**
Other uses:			
Unclassified	14 912	1,127	1,182
Total reported†	**958,376**	**82,327**	**86,362**
Estimated unreported consumption	24,000	2,000	2,000
Grand total†	**982,400**	**84,300**	**88,400**
Daily average‡	**2,691**	**2,719**	**2,852**

* Includes lead content of leaded zinc oxide production.
† Includes lead content of scrap used directly in fabricated products.
‡ Based on number of days in month without adjustment for Sundays and holidays.

U. K. Lead Consumption

(British Bureau of Non-Ferrous Metal Statistics)

(In tons of 2,240 pounds)

	1957	1958	1959
Jan.	29,657	29,607	28,872
Feb.	29,219	27,855	....
Mar.	29,144	29,713	....
Apr.	27,246	26,230	....
May	31,574	28,839	....
June	28,607	28,624	....
July	27,604	27,201	....
Aug.	24,756	21,726	....
Sept.	29,519	28,829	....
Oct.	32,486	31,356	....
Nov.	31,060	28,786	....
Dec.	26,530	27,154	....
Total	**347,699**	**335,920**	....

American Antimony

Monthly Average Prices
In bulk, f.o.b. Laredo
(Cents per lb. in ton lots)

	1956	1957	1958	1959
Jan.	33.00	33.00	33.00	29.00
Feb.	33.00	33.00	30.818	29.00
Mar.	33.00	33.00	29.00	29.00
Apr.	33.00	33.00	29.00	....
May	33.00	33.00	29.00	....
June	33.00	33.00	29.00	....
July	33.00	33.00	29.00	....
Aug.	33.00	33.00	29.00	....
Sept.	33.00	33.00	29.00	....
Oct.	33.00	33.00	29.00	....
Nov.	33.00	33.00	29.00	....
Dec.	33.00	33.00	29.00	....
Aver.	**33.00**	**33.00**	**29.485**	....

Consumers' Lead Stocks, Receipts and Consumption

(Bureau of Mines — In Short Tons)

	Stocks Dec. 31, 1958*	Net Receipts in Jan.	Consumed in Jan.	Stocks Jan. 31, 1959
Soft lead	72,762	58,092	57,031	73,823
Antimonial lead	34,739	22,543	21,028	36,254
Lead in alloys	6,811	3,252	3,436	6,627
Lead in copper-base scrap	1,680	1,112	1,377	1,415
Total	115,992	84,999	†82,872	118,119

* Revised.
† Excludes 3,096 tons of lead which went directly from scrap to fabricated products and 394 tons of lead contained in leaded zinc oxide production.

Consumption of Lead by Class of Product

(Bureau of Mines — In Short Tons)

JANUARY

	Soft lead	Antimonial lead	Lead in alloys	Lead in copper-base scrap	Total
Metal products	33,193	20,538	3,423	1,377	58,531
Pigments	5,750	1	....	....	5,751
Chemicals	16,418	.....	....	....	16,418
Miscellaneous	674	371	....	....	1,045
Unclassified	996	118	13	....	1,127
Total	57,031	21,028	3,436	1,377	†82,872

† Excludes 3,096 tons of lead which went directly from scrap to fabricated products and 394 tons of lead contained in leaded zinc oxide production.

Domestic Zinc Statistics

American Zinc Institute

Commencing with January, 1948, all regularly operating U. S. primary and secondary smelters are included in this report. Production from foreign ores also is included.

(Tons of 2,000 lbs.)

	Stock Beginning	Production	Shipments: Domestic	Shipments: Export & Drawback	Shipments: Gov't Acc't	Shipments: Total	Stock at End	Daily Avg. Prod.
1950 Tl.	94,221	910,354	849,246	18,189	128,256	995,691	8,884	2,494
1950 Mo. Avg.		75,863	70,770	1,516	10,688	82,974		
1951 Total	8,884	931,833	836,800	42,067	39,949	918,816	21,901	2,553
1951 Mo. Avg.		77,653	69,733	3,506	3,329	76,568		
1952 Total	21,901	961,430	803,343	56,202	36,626	896,171	87,160	2,627
1952 Mo. Avg.		80,119	66,945	4,683	3,052	74,681		
1953 Total	87,160	971,191	818,850	16,326	42,332	877,508	180,843	2,661
1953 Mo. Avg.		80,933	68,238	1,361	3,528	73,126		
1954 Total	180,843	868,242	787,922	27,929	108,957	924,808	124,277	2,379
1954 Mo. Avg.		72,353	65,660	2,327	9,080	77,067		
1955 Total	40,979	1,031,018	1,007,619	19,497	87,200	1,114,316	40,979	2,825
1955 Mo. Avg.		85,918	83,968	1,625	7,267	92,860		
1956								
December	70,185	98,234	80,772	671	18,354	99,797	68,622	3,169
1956 Total		1,062,954	869,270	9,027	157,014	1,035,311	68,622	2,904
1956 Mo. Avg.		88,850	72,439	752	13,085	86,275		
1957								
January	68,622	93,452	67,273	450	15,377	83,100	78,974	3,014
February	78,974	88,078	67,731	1,527	10,905	80,163	86,889	3,146
March	86,889	96,924	67,441	1,558	25,608	94,607	89,357	3,127
April	89,357	96,506	55,000	1,411	23,921	80,332	105,531	3,217
May	105,531	96,855	60,729	2,106	26,858	89,693	112,693	3,124
June	112,693	90,719	54,275	1,358	14,324	69,957	133,455	3,024
July	133,455	85,779	57,862	4,497	11,186	73,055	146,179	2,767
August	146,179	84,166	70,318	860	9,871	81,049	149,296	2,715
September	149,296	77,455	62,111	530	10,344	72,985	153,766	2,582
October	153,766	81,492	66,225	372	12,736	79,333	155,925	2,629
November	155,925	79,754	73,437	581	9,148	83,166	152,531	2,658
December	152,531	86,270	62,730	210	9,188	72,128	166,655	2,783
1957 Total		1,067,450	765,132	15,460	179,466	815,567		
1958								
January	166,655	82,343	58,211	641	9,805	68,657	180,346	2,656
February	180,346	68,354	49,072	446	9,993	59,511	189,189	2,441
March	189,189	72,274	48,948	111	8,763	57,822	203,641	2,331
April	203,641	70,214	46,598	159	5,927	52,684	221,171	2,340
May	221,171	71,018	51,390	129	....	51,519	240,670	2,291
June	240,670	66,967	54,487	171	....	54,658	252,979	2,232
July	252,979	65,119	60,312	55	....	60,187	257,911	2,101
August	257,911	62,927	68,718	591	....	69,309	251,529	2,030
September	251,529	63,705	76,905	213	....	77,118	238,116	2,124
October	238,116	65,304	93,018	226	....	93,224	210,176	2,107
November	210,176	65,174	83,394	212	....	83,606	191,744	2,172
December	191,744	75,503	76,862	148	....	77,010	190,237	2,432
1958 Total		828,902	767,755	3,102	34,488	805,325	....	....
1959								
January	190,237	76,481	70,770	171	....	70,941	195,777	2,467
February	195,777	71,174	65,641	849	....	66,490	200,461	2,542
March	200,461	79,918	73,814	482	....	74,296	206,083	2,578

U. S. Consumption of Slab Zinc

Bureau of Mines

By Industries (Short Tons)

	Galvanizers	Die Casters	Brass products	Rolled zinc	Zinc oxide & other	Total
1950 Total	434,094	281,385	136,451	67,779	27,656	947,365
1951 Total	386,373	266,442	141,456	64,000	28,738	887,009
1952 Total	375,563	236,022	155,311	51,508	30,885	849,289
1953 Total	403,162	305,346	177,301	53,784	38,087	977,636
1954 Total	398,599	286,817	107,293	45,979	33,342	876,130
1955 Total	439,694	404,790	144,816	50,363	39,302	1,081,468
1956						
December	32,790	33,238	8,799	3,140	3,405	82,272
Total	421,218	352,451	122,395	45,382	36,251	988,097
1957						
January	34,337	37,517	10,800	3,502	3,434	90,490
February	31,686	32,520	9,156	3,284	3,206	80,752
March	30,747	30,946	8,860	3,553	3,378	78,384
April	30,631	29,166	9,491	4,001	3,300	77,489
May	30,537	28,423	9,563	3,389	3,097	75,909
June	29,907	27,688	8,710	3,613	2,646	73,464
July	26,067	26,116	6,361	2,698	2,981	65,123
August	27,885	29,237	9,755	3,686	3,099	74,562
September	28,651	31,051	9,588	2,911	1,590	75,976
October	32,940	35,499	10,952	3,385	1,783	87,898
November	28,025	31,396	10,024	2,843	1,255	76,595
December	24,383	27,927	7,854	2,679	1,427	67,421
Total	355,796	358,543	111,114	39,544	20,486	924,063
1958						
January	26,861	26,348	9,115	3,183	1,664	69,295
February	24,598	22,629	7,279	2,716	1,316	60,347
March	27,171	19,045	6,871	3,138	1,724	59,978
April	27,464	17,829	6,392	3,259	1,295	58,432
May	30,935	18,316	6,597	2,896	2,263	61,907
June	34,377	21,497	6,643	2,961	2,212	67,690
July	30,677	17,387	6,275	2,848	1,920	60,007
August	34,663	20,382	8,358	3,379	1,901	70,033
September	34,048	25,188	9,624	3,458	770	74,122
October	36,513	27,682	11,753	3,845	881	81,919
November	31,658	27,311	10,067	3,276	826	74,302
December	31,746	29,926	10,529	3,681	1,018	78,082
Total	370,441	273,540	92,906	38,690	16,772	737,942

Prime Western Zinc Prices

(East St. Louis, f.o.b.)

(Cents per pound)

(In tons of 2,240 pounds)

	1956	1957	1958	1959
Jan.	13.46	13.50	10.00	11.50
Feb.	13.50	13.50	10.00	11.411
Mar.	13.50	13.50	10.00	11.00
Apr.	13.50	13.50	10.00	....
May	13.50	11.933	10.00	....
June	13.50	10.84	10.00	....
July	13.50	10.00	10.00	....
Aug.	13.50	10.00	10.00	....
Sept.	13.50	10.00	10.00	....
Oct.	13.50	10.00	10.865	....
Nov.	13.50	10.00	11.386	....
Dec.	13.50	10.00	11.50	....
Aver.	13.497	11.40	10.313	....

High Grade Zinc Prices

(Delivered)

N. Y. Monthly Averages

(Cents per pound)

	1956	1957	1958	1959
Jan.	14.81	14.85	11.35	12.50
Feb.	14.85	14.85	11.35	12.411
Mar.	14.85	14.85	11.35	12.00
Apr.	14.85	14.85	11.084	....
May	14.85	13.283	11.00	....
June	14.85	12.19	11.00	....
July	14.85	11.35	11.00	....
Aug.	14.85	11.35	11.00	....
Sept.	14.85	11.35	11.00	....
Oct.	14.85	11.35	11.865	....
Nov.	14.85	11.35	12.386	....
Dec.	14.85	11.35	12.50	....
Aver.	14.847	12.75	11.407	....

U. K. Zinc Consumption

(British Bureau of Non-Ferrous Metal Statistics)

(In Tons of 2,240 Pounds)

	1957	1958	1959
Jan.	28,485	27,473	27,849
Feb.	26,276	24,551	....
Mar.	27,049	26,967	....
Apr.	24,247	24,984	....
May	29,589	24,579	....
June	25,202	25,587	....
July	25,934	23,794	....
Aug.	20,381	19,076	....
Sept.	27,792	26,747	....
Oct.	29,552	29,838	....
Nov.	26,705	26,432	....
Dec.	24,419	26,042	....
Total	315,631	306,070	....

Mine Production of Zinc in United States

(U. S. Bureau of Mines)

(In short tons)

	Eastern States	Central States	Western States	Total U.S.*
1954				
Total	166,487	63,100	234,942	464,539
1955				
Total	163,230	73,630	277,811	514,671
1956				
Total	175,310	61,080	301,253	537,643
1957				
July	15,391	2,679	24,602	42,672
Aug.	17,078	1,858	23,440	42,376
Sept.	14,111	187	20,481	34,779
Oct.	17,839	188	21,323	34,390
Nov.	14,874	180	19,213	34,967
Dec.	13,893	173	18,683	34,364
Total	196,877	29,506	290,151	520,128
1958				
Jan.	16,165	1,682	20,861	38,708
Feb.	13,652	1,365	18,528	33,545
Mar.	13,922	1,291	20,411	35,624
Apr.	15,719	1,311	22,375	39,405
May	15,580	1,314	18,940	35,834
June	14,931	1,490	16,650	32,971
July	13,427	——	15,985	29,442
Aug.	15,760	——	13,627	29,387
Sept.	14,857	——	15,279	29,865
Oct.	16,197	——	16,074	32,271
Nov.	15,393	——	16,998	32,391
Dec.	15,064	——	16,939	32,003
Total	181,202	8,450	213,267	402,919
1959				
Jan.	16,319	——	19,117	35,436
Feb.	16,405	——	19,974	36,379

*Includes Alaskan output in some months.

Mine Production of Lead in United States

(U. S. Bureau of Mines)

(In short tons)

	Eastern States	Central States	Western States	Total U.S.*
1953				
Ttl.	9,970	136,650	188,776	335,412
1954				
Ttl.	8,608	138,940	169,804	317,352
1955				
Ttl.	10,379	145,640	177,409	333,409
1956				
Ttl.	11,395	141,900	195,034	348,329
1957				
Aug.	674	11,168	15,654	27,496
Sept.	744	9,935	14,087	24,766
Oct.	759	12,392	14,950	28,101
Nov.	619	10,170	12,519	23,308
Dec.	599	9,887	12,393	22,880
Ttl.	9,300	135,800	188,392	333,493
1958				
Jan.	675	12,513	12,613	25,801
Feb.	542	11,356	11,734	23,632
Mar.	526	4,633	13,148	18,307
Apr.	487	12,438	12,739	25,664
May	626	11,660	11,939	24,225
June	615	10,662	11,499	22,776
July	454	10,019	10,662	21,135
Aug:	447	8,859	9,512	18,818
Sept.	389	7,734	11,221	19,344
Oct.	517	9,290	11,467	21,274
Nov.	606	10,500	11,823	22,929
Dec.	565	9,600	11,699	21,865
Ttl.	6,816	119,070	140,033	265,920
1959				
Jan.	469	9,748	13,180	23,397
Feb.	501	8,457	12,620	21,578

Mine Production of Gold in United States

(U. S. Bureau of Mines)

(In fine ounces)

	Eastern States	Western States	Alaska*	Total
1955				
Ttl.	2,026	1,634,625	247,535	1,884,186
1956				
Ttl.	1,998	1,607,930	204,300	1,814,228
1957				
July	203	128,073	33,723	161,999
Aug.	192	126,219	37,933	164,344
Sept.	178	124,454	42,434	167,066
Oct.	183	136,248	38,585	175,016
Nov.	182	125,796	27,000	152,978
Dec.	181	123,250	6,790	130,221
Ttl.	2,174	1,556,450	210,000	1,768,624
1958				
Jan.	207	134,282	2,736	137,226
Feb.	147	116,392	59	116,598
Mar.	174	123,808	96	124,078
Apr.	192	124,705	906	125,615
May	203	124,490	557	125,520
June	182	122,277	8,484	130,943
July	38	116,775	29,735	146,528
Aug.	174	113,281	34,947	148,202
Sept.	156	128,613	38,960	167,459
Oct.	186	135,882	42,467	178,535
Nov.	—	——	——	——
Dec.	—	——	10,373	144,757

* Alaska totals based on mint and smelter receipts.

Mine Production of Recoverable Silver in United States

(U. S. Bureau of Mines)

(In Fine Ounces)

	Eastern States	Missouri	Western States	Alaska*	Total
1957					
October	47,892	29,800	3,036,720	4,816	3,119,228
November	50,821	8,020	2,690,456	3,537	2,752,834
December	50,825	7,000	2,673,590	810	2,732,225
Total	610,386	240,000	37,018,950	26,000	37,895,336
1958					
January	45,358	17,400	2,939,634	....	3,002,716
February	38,608	16,000	2,788,072	....	2,842,685
March	38,134	5,500	2,834,641	72	2,878,285
April	38,308	17,800	2,807,664	453	2,863,829
May	41,840	22,870	2,746,539	1,189	2,811,309
June	3,637	21,300	2,775,606	3,154	2,800,681
July	7,723	21,840	2,503,013	4,584	2,533,256
August	8,819	19,970	2,836,937	5,968	2,417,095
September	5,783	17,180	2,621,537	3,392	2,646,193
October	5,653	20,600	2,749,976	5,338	2,781,560
November	†	16,000	†	3,175	2,720,577
December	†	13,730	†	675	2,682,299
Total	†	210,000	†	28,000	33,022,225
1959					
January	†	17,500	†	2,399	2,751,918

† Figures not available.

* Alaska totals based on mint and smelter receipts.

U. S. Silver Production*

(A.B.M.S.)

(In thousands of ounces; commercial bars, 0.999 fine, and other refined forms)

	Dom.†	For.	Total
1954 Total	38,059	39,422	77,481
1955 Total	33,101	32,780	65,881
1956 Total	38,157	40,160	78,317
1957			
Aug.	2,500	2,558	5,058
Sept.	2,937	3,263	6,200
Oct.	3,334	3,419	6,753
Nov.	2,731	3,374	6,105
Dec.	3,029	2,872	5,901
Total	36,279	34,932	71,211
1958			
January	3,520	3,551	7,071
February	3,589	2,790	6,379
March	2,465	3,568	6,033
April	3,123	3,056	6,179
May	2,597	2,660	5,257
June	3,243	3,210	6,453
July	2,127	2,494	4,621
August	2,651	3,235	5,886
September	2,614	3,165	5,779
October	3,831	2,750	6,581
November	2,505	3,283	5,788
December	3,275	3,652	6,927
Total	35,540	37,414	72,954
1959			
January	2,330	4,460	6,790
February	2,827	2,913	5,740

* The separation between silver of foreign and domestic origin on the basis of refined bars and other refined forms is only approximate.

† Includes purchases of crude silver by the U. S. Mint.

Production of Primary Aluminum in the U. S.

(U. S. Bureau of Mines)

(In short tons)

	1952	1953	1954	1955	1956	1957	1958	1959
Jan.	76,934	89,895	116,247	128,203	140,394	147,029	139,910	156,708
Feb.	72,374	92,649	110,483	116,236	132,763	119,059	121,980	142,116
Mar.	77,069	104,460	122,339	130,272	145,895	135,706	134,019	157,189
Apr.	76,880	102,071	120,434	126,394	144,726	139,152	128,559	....
May	80,803	105,464	125,138	131,128	150,800	145,174	129,083	....
June	77,476	104,152	120,758	127,634	145,726	138,007	115,325	....
July	78,368	109,285	126,161	132,669	151,624	142,157	118,811	....
Aug.	85,175	110,545	125,296	133,551	92,406	143,449	125,416	....
Sept.	76,882	109,333	120,332	130,606	132,316	129,278	124,713	....
Oct.	77,312	108,219	125,089	134,655	149,125	133,759	139,847	....
Nov.	74,639	105,636	121,252	133,689	145,081	135,024	140,962	....
Dec.	83,419	110,291	127,056	140,748	148,391	140,033	153,301	....
Ttl.	937,330	1,252,013	1,460,565	1,565,721	1,679,427	1,647,710	1,565,556	....

Average Silver Prices

(Cents per fine ounce)

	1956	1957	1958	1959
Jan.	90.357	91.375	89.449	90.19
Feb.	90.90	91.375	88.625	90.444
Mar.	91.128	91.375	88.625	91.351
Apr.	90.875	91.375	88.625	....
May	90.75	91.307	88.625	....
June	90.46	90.456	88.625	....
July	90.14	90.31	88.625	....
Aug.	90.614	90.909	88.625	....
Sept.	90.75	90.602	88.673	....
Oct.	90.722	90.625	89.966	....
Nov.	91.375	90.382	90.125	....
Dec.	91.375	89.80	89.932	....
Aver.	90.79	90.824	89.043	....

Note — The averages are based on the price of refined bullion imported on or after August 31, 1943.

U. S. Copper Imports

(A.B.M.S.) (Bureau of the Census)

(In tons of 2,000 lbs.)

	1958	1959	
	Dec.	Jan.	Feb.
Ore, matte & regulus (cont.)	5,140	9,931	5,377
Canada	133	1,324	470
Mexico	307	274	213
Cuba	829	1,050	...
Argentina	8	25	10
Bolivia	583	151	480
Chile	1,853	3,456	...
Peru	795	2,112	153
Philippines	1	...	...
U. of S. Africa	535	1,496	3,990
Australia	95	43	60
Other countries	1	...	1
Blister copper (content)	30,318	30,419	21,844
Mexico	3,088	3,439	1,716
Chile	24,265	25,548	18,968
Peru	1,714	...	605
Rhodesia & Nyasaland	...	828	...
U. of S. Africa	1,250	555	555
Other countries	1	49	...
Refined cathodes and shapes	4,453	2,862	3,548
Canada	3,108	2,250	2,703
Chile	...	...	200
Peru	599	612	595
Germany (W.)	18	...	...
Rhodesia & Nyasaland	728	...	50
Total Imports:			
Crude & refined	39,911	43,212	30,769
Old and scrap (content)	499	502	273
Composition metal (content)	2	...	...
Brass scrap and old (cu. cont.)	392	146	32

U. S. Copper Scrap Exports

(A.B.M.S.) (Bureau of the Census)

(In tons of 2,000 lbs.)

	1958	1959	
	Dec.	Jan.	Feb.
Copper scrap, unalloyed* (new and old)	2,739	1,345	975
Canada	170	258	292
Belgium	60	...	11
Germany (W.)	1,451	446	231
Hungary	419	...	...
Italy	296	165	...
Netherlands	166	...	...
Spain	63	...	...
India	69	164	160
Japan	...	181	89
Hong Kong	11	...	...
Other countries	34	131	192
Copper-base scrap, alloyed† (new and old)	3,987	4,359	3,188
Canada	3	5	4
France	49	...	...
Germany (W.)	1,007	510	275
Italy	137	214	22
Netherlands	218	385	193
Portugal	27	...	...
Spain	64	17	4
Switzerland	111	...	...
India	78	43	136
Japan	2,193	3,013	2,318
Hong Kong	66	74	50
Other countries	34	98	186

* Ash, brass mill, clippings, dross, flue dust, residues, scale, skimmings, wire scrap.

† Copper-base alloys, including brass and bronze — Ashes, clippings for remanufacture, cupro-nickel scrap, cupro-nickel trimmings, nickel silver scrap, phosphor bronze, phosphor copper, skimmings, turnings, round.

U. S. Copper Exports

(A.B.M.S.) (Bureau of the Census)

(In tons of 2,000 lbs.)

	1958	1959	
	Dec.	Jan.	Feb.
Ore, conc., matte & other unref. (cont.)	396	1,079	618
Refined ingots, bars, etc.†	45,587	22,196	20,816
Canada	755	893	570
Argentina	2,794	661	882
Brazil	2,261	1,053	736
Belgium	84	62	...
Denmark	112	112	369
France	11,784	7,688	4,874
Germany, (W.)	5,137	2,775	2,428
Italy	2,900	1,726	1,497
Netherlands	2,824	1,458	934
Norway	850	..	336
Sweden	2,687	...	...
Switzerland	1,006	111	503
United Kingdom	11,386	3,978	6,408
Yugoslavia	...	...	560
India	112	168	95
Japan	872	1,286	566
Australia	...	224	...
Other countries	23	1	58
Total Exports:			
Crude & refined	45,983	23,275	21,434
Pipes and tubes	69	66	79
Plates and sheets	10	35	29
Semifabricated forms	255	99	45
Wire, bare	167	272	188
Building wire and cable††	219	250	226
Weatherproof wire††	1	2	4
Insulated copper wire n.e.s.††	788	758	704

† Includes exports of refined copper resulting from scrap that was reprocessed on toll for account of the shipper.

‡ Gross weight; n.e.s.—not elsewhere specified.

U. S. Lead Imports

(A.B.M.S.) (Bureau of the Census)

(In tons of 2,000 lbs.)

	1958	1959	
	Dec.	Jan.	Feb.
Ore, matte, etc. (content)	18,313	17,707	9,698
Canada	2,501	2,724	4,626
Greenland	...	...	14
Mexico	44	37	...
Honduras	259	...	107
Bolivia	830	2,646	122
Chile	178	...	...
Peru	3,527	6,054	3,896
U. of S. Africa	6,835	13	519
Australia	4,037	6,162	409
Philippines	84	71	...
Other countries	18	...	5
Pigs and bars	32,833	16,979	14,609
Canada	1,996	1,850	1,016
Mexico	7,632	3,905	4,681
Peru	3,125	1,305	2,872
Belgium	430	280	...
Denmark	124	61	23
Germany (W.)	110	110	1,102
Spain	2,298	1,675	221
U. Kingdom	501	265	...
Yugoslavia	3,001	2,264	2,175
Morocco	777	...	...
Australia	12,618	5,209	2,519
Other countries	221	55	...
Total Imports:			
Ore, base bullion, refined	51,146	34,686	24,307
Lead scrap, dross, etc. (cont.)	1,547	1,280	270
Antimonial lead & typemetal	272	634	177
Lead content thereof	258	602	135

U. S. Zinc Exports

(A.B.M.S.) (Bureau of the Census)

(In tons of 2,000 lbs.)

	1958	1959	
	Dec.	Jan.	Feb.
Slabs, blocks, etc.	281	161	183
Canada	...	1	1
Mexico	268	154	110
Cuba	3	...	...
United Kingdom	...	6	...
Other countries	10	...	72
Total Exports:			
Ore, conc., slabs, blocks	281	161	183
Scrap, ashes, dross and skimmings	599	581	23
Battery shells and parts, unassembled	1	9	...
Rolled in sheets, plates and strips and dis castings	281	308	379
Zinc & zinc alloys in crude and semifabricated forms	113	84	116
Zinc Oxide	238	144	106

U. S. Zinc Imports

(A.B.M.S.) (Bureau of the Census)

(In tons of 2,000 lbs.)

	1958	1959	
	Dec.	Jan.	Feb.
Zinc ore (content)	48,082	50,182	51,165
Canada	15,372	15,398	11,871
Mexico	15,914	19,937	17,657
Honduras	122	13	43
Bolivia	1,266	367	...
Chile	...	..	446
Peru	11,276	5,817	7,168
Germany (W.)	...	5,757	...
U. of S. Africa	3,751	...	312
Australia	202	2,832	2,792
Philippines	14	13	...
Other countries	165	48	10,876†
Zinc blocks, pigs, etc.	18,669	14,951	6,807
Canada	7,035	7,376	3,877
Mexico	3,032	1,946	693
Peru	1,537	501	600
Belgium	660	827	...
Germany(W.)	615	55	...
Italy	165	1,257	193
Netherlands	1,790	56	...
Norway	224	168	...
United Kingdom	...	756	...
Yugoslavia	55	882	..
Belgian Congo	2,721	...	1,052
Rhodesia & Nyasaland	504	672	392
Australia	...	455	...
Japan	331	...	...
Total Imports:			
Zinc ore, blocks, pigs	66,751	65,133	57,972
Dross & skim.	44	81	...
Old and worn out	...	4	11

† Includes 7,269 tons from Spain and 3,448 tons from Italy.

Comparative Metal Prices

	Av. 1939	OPA Av. 1946	1959 Apr. 20
Copper domestic Electro., Del. Val.	11.20	14.375	31.50-32.00
Lead (N. Y.)	5.05	8.25	11.50
P. W. Zinc (E. St. Louis, f.o.b.	5.05	5.05	11.00
New York, del.	...	...	11.50
Tin, Spot Straits, N. Y.	...	...	102.25
Aluminum ingot 99½%+	20.00	15.00	26.80
Antimony (R.M.M. brand, f.o.b. Laredo)	12.36	14.50	29.00

World Production of Copper

(American Bureau of Metal Statistics)

(In Tons of 2,000 Pounds)

	United States (a)	Canada (b)	Mexico (crude) (c)	Chile (d)	Peru (d)	Fed. Rep. of Germany (e)	Norway (f)	United Kingdom (g-h)	Yugoslavia (e)	India (f-h)	Japan (e)	Turkey (f)	Australia (e)	Northern Rhodesia (e)	Union of South Africa (d)
1955															
Total	1,036,702	326,599	61,583	447,288	35,478	286,905	14,876	138,271	31,151	8,432	124,908	26,313	41,935	350,302	47,176
1956															
Total	1,133,134	356,251	69,918	506,251	35,005	279,461	16,457	127,365	32,390	8,827	139,462	27,101	55,711	435,186	47,914
1957															
Oct.	93,078	31,334	6,140	43,096	3,000	23,955	1,581	10,368	3,025	999	13,311	1,880	4,778	43,123	4,000
Nov.	90,045	35,823	5,778	42,995	3,227	23,127	1,464	9,606	3,080	775	13,166	1,862	4,527	44,013	5,134
Dec.	95,285	35,593	5,446	43,765	4,786	21,786	1,424	9,607	3,207	810	13,038	2,114	4,388	42,459	4,672
Total	1,115,483	360,745	42,905	....	46,141	255,710	17,265	121,799	37,186	9,298	143,654	27,101	55,633	499,418	47,828
1958															
Jan.	94,735	32,841	5,272	41,578	3,990	23,790	1,554	7,909	3,000	848	12,345	2,091	4,334	42,996	4,285
Feb.	87,130	30,639	4,849	39,648	3,235	21,792	1,340	11,495	3,054	756	10,806	1,509	4,045	36,364	4,708
Mar.	90,336	34,190	5,954	40,205	3,497	25,161	1,569	9,559	6,023	821	10,195	2,580	5,555	44,847	4,731
April	86,123	32,635	6,101	16,115	4,010	23,286	1,463	9,884	3,149	788	8,515	2,942	6,220	41,396	4,413
May	80,628	32,471	6,141	23,264	3,481	24,543	1,636	7,095	2,957	786	9,806	2,574	6,229	41,615	4,488
June	71,092	32,418	5,954	34,811	3,405	23,128	1,674	7,414	3,102	769	10,617	1,810	6,819	44,447	4,018
July	64,444	31,131	5,995	40,495	3,780	24,418	1,610	9,091	3,245	801	10,762	1,136	6,139	44,010	3,324
Aug.	67,917	50,867	6,340	45,211	3,646	26,409	1,855	3,451	2,838	786	11,053	....	6,220	42,000	4,974
Sept.	79,541	27,546	6,294	40,913	3,637	24,649	1,749	12,027	2,870	792	12,583	....	....	17,291	4,726
Oct.	92,214	22,572	5,380	47,230	2,950	27,635	1,618	11,225	3,616	809	13,310	....	....	....	4,749
Nov.	96,369	20,368	5,040	46,310	3,923	24,932	1,594	8,542	3,462	774	11,764	....	....	25,612	4,249
Dec.	97,641	19,023	5,066	46,284	3,196	25,569	1,597	9,042	2,929	832	15,054	....	....	45,935	....
Total	1,881,170	346,816	68,386	462,064	42,750	295,312	....	106,134	....	9,062	136,612	....	....	426,513	....
1959															
Jan.	95,542	....	5,342	....	3,115	25,945	....	7,239	....	679	17,284	....	....	48,609	....
Feb.	90,560	....	4,810	....	1,627	....	....	....	....	....	....	....	....	44,420	....

(a) Reported by Copper Institute. Crude, "recoverable contents of mine production or smelter production or shipments, and custom intake." Does not include intake of scrap nor of imported ore except that received from Cuba and Philippines. (b) Blister copper plus recoverable copper in concentrates, matte, etc., exported. (c) Crude copper, i. e., copper content of blister or converter copper as originally produced in the several countries, although some of it may be refined at home; e. g., in Rhodesia. (d) Blister and/or refined. (e) Refined. There are quantities of scrap included in the electrolytic production in addition to that reported, tonnage of which is not obtainable. (f) Smelter production. (g) Refinery production from imported blister only. (h) British Bureau of Non-Ferrous Metal Statistics. * Refined.

World Production of Refined Lead

(American Bureau of Metal Statistics)

(In Tons of 2,000 Pounds)

	United States	Canada	Mexico	Peru	Belgium	France	Fed. Rep. of Germany	Italy	Spain	Yugoslavia	Japan	Australia (a)	French Morocco	Tunisia	Rhodesia	Total
1955																
Total	547,153	148,811	221,136	67,303	91,241	73,251	162,508	46,806	67,509	83,347	40,912	254,358	28,870	28,620	17,976	1,893,125
1956																
Total	613,293	147,865	213,524	61,917	111,479	73,251	178,713	42,780	64,824	83,507	51,019	256,300	30,993	26,623	17,024	1,984,344
1957																
Oct.	52,041	10,302	18,627	6,323	9,615	7,874	17,643	3,491	6,582	7,409	5,297	19,639	2,733	2,512	1,456	171,334
Nov.	48,771	12,125	19,491	6,374	9,257	8,396	16,703	4,063	4,840	7,373	5,678	24,987	2,806	2,598	1,456	177,739
Dec.	50,500	12,504	19,465	6,951	8,191	7,512	17,215	4,231	5,460	7,846	5,785	24,095	4,173	3,123	1,568	180,412
Total	604,533	142,935	218,266	55,971	....	94,509	195,136	42,336	61,332	85,313	59,670	261,035	34,441	27,069	12,364	2,052,431
1958																
Jan.	47,665	12,672	20,144	6,188	8,375	7,501	18,017	4,013	5,297	6,042	4,974	25,518	3,323	1,785	1,232	173,922
Feb.	47,133	11,432	18,341	5,306	8,347	7,959	15,939	4,433	5,337	7,452	4,352	23,628	3,326	2,781	1,176	167,791
Mar.	43,441	12,837	18,455	6,899	8,773	7,890	16,548	4,597	6,392	8,600	4,335	26,359	3,375	1,174	1,204	171,654
May	47,487	12,212	21,005	5,421	9,058	8,339	16,327	4,652	6,281	7,021	3,481	19,876	2,338	2,394	1,204	160,946
April	40,984	11,785	21,099	5,626	8,917	8,858	15,144	2,402	6,944	7,482	3,541	25,035	3,532	2,978	1,204	174,255
June	44,636	12,706	17,846	6,255	8,264	7,977	15,194	3,677	6,403	6,469	3,461	22,979	2,906	3,127	1,232	164,278
July	38,827	7,175	18,315	6,880	8,548	8,319	11,229	4,581	6,327	6,872	3,567	21,563	2,767	568	1,232	147,624
Aug.	39,250	6,940	17,991	6,100	7,495	15	13,760	4,584	6,913	5,414	3,610	19,942	2,584	2,756	1,176	140,501
Sept.	43,269	10,908	16,256	5,192	7,849	8,202	16,700	4,367	5,692	6,942	3,587	22,632	2,184	2,369	1,120	158,285
Oct.	45,467	12,598	11,968	5,074	7,940	9,308	17,130	4,639	7,121	9,242	3,522	22,482	3,560	2,410	1,176	164,818
Nov.	40,486	10,645	17,067	6,448	9,495	9,068	17,785	4,825	6,914	11,155	3,555	20,148	2,625	2,519	1,120	165,406
Dec.	44,042	....	20,902	5,344	10,342	10,351	18,370	5,101	....	11,212	3,769	21,492	4,002	2,779	1,120	.....
Total	575,612	....	246,443	80,999	119,192	111,337	223,973	60,860	....	....	52,915	....	42,266	32,359	16,492	.....
1959																
Jan.	43,652	....	19,031	4,951	10,761	8,296	18,658	4,636	....	....	6,006	....	2,575	1,068	1,344	.....
Feb.	39,498	....	15,472	2,662	....	....	....	....	....	....	....	....	....	....	1,344	.....

(a) Production credited to Australia includes lead refined in England from Australian base bullion.

World Production of Slab Zinc

(American Bureau of Metal Statistics)

(In Tons of 2,000 Pounds)

	United States (a)	Can. (b)	Mexico	Peru (b-c)	Belgium	France (a)	Fed. Rep. of Germany	Great Britain	Italy	Netherlands	Norway (b)	Spain	Yugoslavia	Japan (a)	Australia (b)	Rhodesia (b)	Total (d)
1955																	
Total	1,031,018	257,006	61,879	18,943	233,623	123,623	197,624	90,917	77,761	31,203	49,724	26,244	15,175	122,965	113,221	31,248	2,534,457
1956																	
Total	1,062,954	255,601	62,136	10,428	251,906	124,105	204,961	90,784	80,407	32,123	53,170	25,224	15,434	153,821	117,445	32,396	2,630,383
1957																	
July	85,779	20,062	5,263	3,078	20,176	12,511	16,615	7,236	7,178	2,629	4,690	2,049	2,753	14,245	12,229	2,856	225,017
Aug.	94,166	20,305	5,144	3,233	19,301	12,387	16,617	7,272	7,029	2,641	4,378	2,143	2,740	14,008	10,675	2,856	220,388
Sept.	77,455	20,247	5,090	3,000	20,129	10,631	16,389	7,100	6,954	2,698	4,476	1,911	2,745	13,753	10,300	2,800	211,477
Oct.	81,490	20,890	5,351	2,892	21,688	12,305	16,800	7,292	6,133	2,781	4,419	2,011	2,011	14,215	10,829	2,856	221,830
Nov.	79,754	20,933	5,227	3,014	21,660	11,884	16,580	7,036	5,712	2,763	4,399	2,164	2,164	12,905	10,521	2,772	215,399
Dec.	86,270	21,829	5,441	3,333	22,274	12,413	17,684	7,483	6,596	2,742	4,483	2,789	2,189	13,638	10,895	2,828	230,624
Total	1,574,500	247,356	62,354	35,772	259,701	148,455	202,627	85,348	81,179	32,786	52,787	24,279	30,256	152,145	123,587	33,040	2,692,833
1958																	
Jan.	82,343	21,801	5,561	3,271	22,382	12,795	17,187	7,179	4,911	2,654	4,134	2,209	2,943	13,126	10,816	2,828	221,112
Feb.	68,354	19,743	4,985	2,669	22,026	12,028	15,562	6,599	5,275	2,659	4,030	1,975	2,797	12,072	9,642	2,576	199,114
Mar.	72,274	22,314	5,620	2,782	21,453	13,786	16,743	7,584	6,549	2,709	3,851	2,045	3,013	13,217	10,707	2,856	214,049
April	70,214	20,989	5,289	2,597	20,886	14,985	15,693	8,018	6,925	2,586	3,850	2,207	2,853	9,305	10,424	2,772	204,625
May	71,018	21,269	5,254	2,699	20,949	15,279	16,128	8,343	7,202	2,442	3,962	2,372	2,871	13,504	10,918	2,856	211,529
June	66,967	20,354	5,016	2,429	20,094	14,243	15,663	7,202	7,731	2,221	3,307	2,309	2,854	14,040	10,988	2,744	204,067
July	65,119	20,878	5,285	2,520	19,556	14,295	16,210	7,140	5,879	2,471	3,815	2,296	2,928	15,835	10,742	2,884	203,828
Aug.	62,297	21,152	5,216	2,822	18,308	14,253	16,204	6,689	5,991	2,533	3,793	2,259	2,820	12,420	11,075	2,912	.....
Sept.	63,705	20,531	5,025	2,640	17,961	12,232	15,635	6,887	5,991	2,533	3,793	2,259	2,820	12,420	11,075	2,912	199,142
Oct.	65,304	21,125	5,344	2,305	17,866	14,176	16,462	6,046	6,442	2,820	4,915	2,313	2,793	14,436	11,045	2,940	203,169
Nov.	65,174	20,274	5,197	2,625	18,696	13,274	16,196	6,158	5,874	2,249	4,669	2,244	3,370	13,501	10,508	2,828	.....
Dec.	75,503	21,705	5,537	2,686	19,402	13,844	17,090	7,564	6,344	2,332	4,755	2,262	2,684	12,473	10,860	2,856	.....
Total	892,607	254,661	18,354	34,685	257,540	177,422	210,408	80,494	5,955	2,841	54,423	....	....	166,883	....	39,508	.....
1959																	
Jan.	76,481	21,456	5,476	2,753	19,857	13,903	17,164	5,955	5,617	....	4,826	....	....	11,679	....	2,800	.....
Feb.	71,174	19,709	4,915	1,497	....	....	....	6,123	....	....	4,928	....	....	....	....	2,548	.....

(a) Partially electrolytic. (b) Entirely electrolytic. (c) Beginning 1954 both electrolytic and electrochemic. (d) The above totals omit production in Russia, Czechoslovakia, Poland and in Argentina.

U. K. Virgin Copper Stocks

(In long tons)
(British Bureau of Non-Ferrous Metal Statistics)

At start of:	1957	1958	1959
Jan.	59,614	91,477	64,184
Feb.	59,203	82,483	65,941
Mar.	62,120	89,147	65,875
Apr.	61,779	94,330	....
May	71,101	88,582	....
June	61,991	88,913	....
July	64,121	81,851	....
Aug.	81,146	84,756	....
Sept.	98,595	89,899	....
Oct.	100,815	85,092	....
Nov.	90,877	74,686	....
Dec.	81,657	69,023	....

U. K. Refined Lead Stocks

(British Bureau of Non-Ferrous Metal Statistics)

(In long tons)

At start of:	1957	1958	1959
Jan.	39,420	51,295	45,444
Feb.	41,433	49,134	48,102
Mar.	36.900	47,738	43,542
Apr.	34,877	40,547	....
May	44,933	37,509	....
June	40,804	34,608	....
July	42,148	40,518	....
Aug.	48,275	37,148	....
Sept.	51,435	43,758	....
Oct.	45,301	48,856	....
Nov.	50,371	40,216	....
Dec.	48,065	35,335	....

U. K. Stocks of Zinc

(British Bureau of Non-Ferrous Metal Statistics)

(In tons of 2,240 lbs.)

At start of:	Virgin Zinc 1958	Virgin Zinc 1959	Zinc Conc. 1958	Zinc Conc. 1959
Jan.	44,926	34,166	79,349	56,371
Feb.	43,308	34,805	82,125	58,518
Mar.	46,662	36,850	87,721	57,897
Apr.	46,608	....	84,631	....
May	47,251	....	80,964	....
June	50,539	....	74,470	....
July	49,613	....	71,553	....
Aug.	48,497	....	70,105	....
Sept.	45,590	....	63,909	....
Oct.	45,784	....	57,376	....
Nov.	39,341	....	53,371	....
Dec.	35,396	....	58,022	....

U. K. Copper Exports

(British Bureau of Non-Ferrous Metal Statistics)

(In tons of 2,240 lbs.)

(Gross Weight)	1958 Dec.	1959 Jan.	1959 Feb.
Copper unwrought — ingots, blocks, slabs, bars, etc.	3,786	7,835	9,465
Plates, sheets, rods, etc.	4,759	3,953	1,777
Wire (including insulated electric wire)	3,261	3,033	6,105
Tubes	1,249	1,162	907
Other copper, worked (including pipe fittings)	97	95	90
Total	13,152	16,078	18,344

Copper Consumption in United Kingdom

British Bureau of Non-Ferrous Metal Statistics
(In tons of 2,240 pounds)

	Unalloyed	Alloyed*	Total	Virgin	Scrap
1956 Total	388,167	251,312	639,479	500,794	138,685
1957					
November	35,102	20,506	55,608	44,144	11,464
December	30,043	18,591	48,634	38,104	10,530
Total	407,326	234,158	641,484	507,493	133,991
1958					
January	35,799	20,816	56,615	46,437	10,178
February	32,207	19,352	51,559	37,907	13,652
March	33,491	19,580	53,071	41,539	11,532
April	36,722	19,100	55,822	43,784	12,038
May	35,810	18,423	54,233	43,571	10,662
June	39,277	18,141	57,418	46,080	11,338
July	36,743	17,091	53,564	42,373	11,191
August	28,416	13,756	42,181	33,073	9,108
September	42,813	18,596	61,408	52,018	9,390
October	43,402	21,788	65,190	53,937	11,253
November	40,987	19,232	60,219	47,932	12,287
December	37,580	19,118	56,698	45,968	10,730
Total	442,977	225,001	667,978	534,619	133,359
1959					
January	32,678	21,217	52,979	39,815	13,164
February	29,373	19,020	48,293	35,775	12,518

* Includes copper sulphate effective October, 1954.

U. K. Zinc Imports

(British Bureau of Non-Ferrous Metal Statistics)

(In tons of 2,240 lbs.)

	1958 Dec.	1959 Jan.	1959 Feb.
(Gross Weight)			
Zinc ore and conc.	7,099	27,979	972
Zinc conc.†	6,610	8,510	*
Australia	5,728	8,023	...
Burma	882	487	...
Zinc and zinc alloys:			*
(Gross Wt.)	13,752	15,083	15,674
Rhodesia-Nyasaland	150	200	225
Australia	950	...	1,175
Canada	8,462	6,938	7,537
Belgium	1,334	2,180	1,583
Germany (W.)	3	500	...
Netherlands	601	1,305	275
Soviet Union	960	1,611	2,118
United States	...	26	855
Belgian Congo	500	525	500
Other countries	792	1,798	1,406
Zinc and zinc alloys:			
(Gross Wt.)	455	1,300	368

Zinc Imports and Exports By Principal Countries

(A. B. M. S.)

Reported in ingots, slabs, etc.; metric tons except where otherwise noted.

	1958 Nov.	1958 Dec.	1959 Jan.
IMPORTS			
U. S. (s.t.)	12,789	18,669	14,951
Belgium	1,010	...	...
Denmark	988	1,023	...
France	985	1,425	1,717
Germany, West†	6,779	...	...
Italy	70	...	...
Netherlands	433	1,792	836
Sweden	2,669	1,842	...
Switzerland†	1,092	1,259	1,157
U. K. (l.t.)	9,440	13,752	15,083
India* (l.t.)	3,368	1,909	3,048
EXPORTS			
U. S. (s.t.)	2	281	161
Canada (s.t.)	17,978	18,344	9,313
Belgium	13,966	...	...
Denmark	606	516	....
France	82	1	50
Germany, West†	2,366	...	...
Italy	1,291	...	...
Netherlands	2,189	1,893	2,731
Norway	2,950	3,033	...
Switzerland†	76	739	340
U. K.‡ (l.t.)	1,033	455	1,300
Northern Rhodesia* (l.t.)	1,818	2,986	1,993
Australia* (l.t.)	2,754	3,231	...

† Includes scrap.
‡ Includes manufactures.
* British Bureau of Non-Ferrous Metal Statistics.

United Kingdom Tin Statistics

(British Bureau of Non-Ferrous Metal Statistics)

	Tin Content of Tin in Ore: Imports	Production*	Stock at end of period*	Tin Metal: Imports	Production*	Consumption	Exports & Re-exports	Stock at end of period
1957 Total	39,272	1,028	....	9,834	34,175	20,365	7,362	71,931
1958								
February	3,243	86	3,446	2,495	2,746	1,567	310	20,322
March	2,350	89	3,261	1,018	3,106	1,566	1,408	20,940
April	2,678	82	4,407	582	1,790	1,725	924	20,069
May	2,707	101	5,872	1,428	3,400	1,583	...	21,529
June	1,815	104	2,431	1,029	2,964	1,719	912	21,715
July	2,007	107	2,020	329	2,904	1,656	478	20,880
August	2,235	44	2,063	1,525	2,423	1,412	912	19,676
September	1,743	99	1,564	1,141	2,579	1,784	988	19,942
October	1,913	91	1,419	145	2,488	2,072	882	20,135
November	1,971	96	1,770	851	2,187	1,795	594	19,285
December	2,757	90	....	317	2,350	1,802	1,770	19,054
1958 Total	27,419	1,090	....	13,195	32,551	20,413	20,398	19,054
1959								
January	1,337	....	....	324	2,925	1,769	2,381	16,744

*As reported by International Tin Study Group. Production of Tin Metal includes production from imported scrap and residues refined on toll. Stocks exclude strategic stock but include official warehouse stocks.

Canada's Copper Output

(Dominion Bureau of Statistics)

(Refined Copper)
(In Tons)

	1956	1957	1958	1959
Jan.	26,653	25,469	32,868	24,721
Feb.	26,229	21,861	28,668	....
Mar.	26,750	27,663	29,239	....
Apr.	26,617	27,398	30,635	....
May	27,626	29,086	32,471	....
June	27,122	24,093	32,418	....
July	27,250	27,195	31,131	....
Aug.	29,219	26,943	30,867	....
Sept.	27,950	24,633	27,546	....
Oct.	29,696	30,312	22,572	....
Nov.	27,346	27,331	20,368	....
Dec.	28,716	31,604	19,033	....
Year	331,174	323,588	346,816	....

Canada's Copper Exports

(Dominion Bureau of Statistics)

(Ingots, bars, slabs and billets)
(In Tons)

	1956	1957	1958	1959
Jan.	15,981	20,582	26,883	10,620
Feb.	11,041	16,272	16,816	....
Mar.	12,276	14,720	18,662	....
Apr.	14,476	16,417	23,261	....
May	12,851	19,048	19,358	....
June	10,985	10,826	20,831	....
July	13,599	18,621	21,703	....
Aug.	14,710	21,980	15,881	....
Sept.	17,268	14,314	15,373	....
Oct.	13,896	13,110	20,341	....
Nov.	19,130	16,622	14,391	....
Dec.	18,630	16,282	11,138	....
Year	174,843	198,794	224,638	....

Canada's Lead Output

(Dominion Bureau of Statistics)

(Recoverable Lead)*
(In Tons)

	1956	1957	1958	1959
Jan.	16,002	14,032	17,117	17,048
Feb.	14,344	15,170	14,908	....
Mar.	16,857	16,940	15,421	....
Apr.	11,573	14,275	15,644	....
May	15,446	14,591	15,131	....
June	18,145	16,431	15,645	....
July	15,841	14,377	14,076	....
Aug.	16,104	14,679	12,260	....
Sept.	15,760	15,869	15,401	....
Oct.	16,725	14,151	14,564	....
Nov.	14,865	15,879	16,680	....
Dec.	16,056	15,296	18,248	....
Year	188,971	171,690	185,095	....

* New base bullion from Canadian ores plus recoverable lead in ores or concentrates shipped for export.

Canada's Lead Exports

(Dominion Bureau of Statistics)

(In Pigs)
(In Tons)

	1956	1957	1958	1959
Jan.	4,888	8,946	4,752	5,034
Feb.	3,856	6,633	1,553	....
Mar.	4,007	7,044	9,497	....
Apr.	7,636	7,314	7,450	....
May	7,214	9,676	7,764	....
June	6,632	7,210	4,036	....
July	9,696	4,682	12,629	....
Aug.	4,713	6,416	7,232	....
Sept.	9,908	8,467	5,125	....
Oct.	9,072	7,761	10,320	....
Nov.	9,227	6,175	10,641	....
Dec.	2,734	4,217	11,352	....
Year	79,633	84,541	92,351	....

Canada's Zinc Output

(Dominion Bureau of Statistics)

(Refined Zinc)
(In Tons)

	1956	1957	1958	1959
Jan.	21,696	20,340	21,801	21,456
Feb.	20,356	19,808	19,743	....
Mar.	22,010	21,941	22,314	....
Apr.	21,339	20,504	20,989	....
May	21,790	20,564	21,269	....
June	20,780	19,928	20,353	....
July	21,691	20,061	20,873	....
Aug.	21,354	20,305	21,152	....
Sept.	20,691	20,247	20,530	....
Oct.	21,412	20,892	21,125	....
Nov.	20,470	20,933	20,273	....
Dec.	22,012	21,823	21,705	....
Year	255,607	247,351	252,157	....

Canada's Zinc Exports

(Dominion Bureau of Statistics)

(Slabs in Tons)

	1956	1957	1958	1959
Jan.	15,550	19,304	17,349	13,565
Feb.	11,757	16,618	8,376	....
Mar.	8,822	14,923	19,636	....
Apr.	14,317	17,131	16,346	....
May	11,357	16,680	15,122	....
June	15,296	16,157	7,776	....
July	15,499	12,912	27,394	....
Aug.	13,070	20,520	15,906	....
Sept.	19,732	17,671	8,670	....
Oct.	20,792	16,735	22,810	....
Nov.	21,411	17,225	17,978	....
Dec.	16,125	16,131	18,344	....
Year	183,728	202,007	195,707	....

Canada's Silver Exports

(Dominion Bureau of Statistics)

(In ores and concentrates)
(Fine Ounces)

	1957	1958	1959
Jan.	253,940	634,715	185,367
Feb.	380,463	208,149	.....
Mar.	521,849	350,827	.....
Apr.	431,646	284,971	.....
May	523,228	376,082	.....
June	468,559	438,253	.....
July	844,545	529,770	.....
Aug.	811,530	279,511	.....
Sept.	861,857	583,570	.....
Oct.	432,000	323,475	.....
Nov.	263,273	217,892	.....
Dec.	186,569	871,573	.....
Year	5,979,459	5,098,788	.....

Canada's Silver Output

(Dominion Bureau of Statistics)

(In Ounces)

	1957	1958	1959
Jan.	2,158,631	2,529,583	3,094,398
Feb.	2,051,679	2,294,655	.....
Mar.	2,346,316	2,448,698	.....
Apr.	2,225,638	2,558,958	.....
May	2,111,185	2,650,665	.....
June	2,208,584	2,527,632	.....
July	2,383,390	2,385,687	.....
Aug.	2,592,468	2,884,154	.....
Sept.	2,382,121	2,856,304	.....
Oct.	2,817,358	2,390,027	.....
Nov.	2,566,519	2,643,790	.....
Dec.	2,537,984	2,917,528	.....
Year	28,361,873	31,087,681	.....

Canada's Nickel Output

(Dominion Bureau of Statistics)

(In Tons)

	1956	1957	1958	1959
Jan.	14,985	16,609	16,710	8,284
Feb.	14,997	15,027	15,896	....
Mar.	15,504	16,733	15,853	....
Apr.	14,431	15,347	15,163	....
May	15,203	16,225	15,231	....
June	14,492	15,447	14,603	....
July	15,125	15,878	12,851	....
Aug.	14,852	16,756	12,597	....
Sept.	14,530	15,604	11,786	....
Oct.	15,762	15,628	3,682	....
Nov.	15,062	14,587	3,178	....
Dec.	14,824	15,096	3,298	....
Year	178,767	188,962	140,842	....

Canadian Copper Exports

(Dominion Bureau of Statistics)

(In tons of 2,000 lbs.)

	1958 Dec.	1959 Jan.	1959 Feb.
Ore, matte, regulus, etc. (content)	2,791	2,493	2,476
United States	1,402	339	469
Belgium	157	...	...
Germany (W.)	74	...	...
Norway	1,130	2,154	391
United Kingdom	28	...	11
Japan	...	...	1,605
Ingots, bars, billets, anodes	11,138	10,620	10,304
United States	2,696	2,099	2,705
Brazil	...	124	66
Belgium	...	840	280
France	364	1,176	840
Germany (W.)	560	784	728
Italy	252	...	84
Netherlands	168	223	...
United Kingdom	6,298	4,646	5,404
India	800	671	28
Japan	...	...	110
Other countries	...	57	59
Total Exports:			
Crude & refined	13,929	13,113	12,780
Old and scrap	992	150	190
Rods, strips, sheet & tubing	2,694	1,673	358

Canadian Zinc Exports

(Dominion Bureau of Statistics)

(In tons of 2,000 lbs.)

	1958 Dec.	1959 Jan.	1959 Feb.
Ore (zinc content)	28,544	13,566	12,675
United States	16,350	13,566	12,675
Belgium	1,856	...	...
Germany (W.)	409	...	..
Netherlands	546	...	...
Norway	4,616	...	...
United Kingdom	4,767	...	...
Slab zinc	18,344	9,313	15,945
United States	7,336	3,524	3,376
Brazil	192	106	220
Chile	110	...	77
Germany (W.)	84	112	56
Netherlands	672	168	784
United Kingdom	9,950	5,134	11,132
Korea	...	248	...
Hong Kong	...	...	56
India	...	...	244
Other countries	...	21	...
Total Exports:			
Ore and slabs	46,888	22,879	28,620
Zinc scrap, dross, ashes	461	425	64
United States	47	81	64
Belgium	252	75	...
Netherlands	113	191	...
Japan	49	78	...

Canada's Nickel Exports

(Dominion Bureau of Statistics)

(Refined, in oxides, matte, etc.)
(In Tons)

	1957	1958	1959
January	14,260	14,233	6,757
February	9,974	12,157	.....
March	14,958	12,316	.....
April	18,671	20,962	.....
May	18,351	20,574	.....
June	14,539	16,144	.....
July	14,181	14,055	.....
August	14,966	13,012	.....
September	14,160	14,371	.....
October	13,370	8,335	.....
November	16,620	3,001	.....
December	14,606	5,060	.....
Year	178,656	154,220	.....

Canadian Lead Exports

(Dominion Bureau of Statistics)

(In tons of 2,000 lbs.)

	1958 Dec.	1959 Jan.	1959 Feb.
Ore (lead content)	9,013	3,318	2,091
United States	3,207	3,318	2,091
Belgium	3,521	...	...
Germany (W.)	1,667	...	...
United Kingdom	618	...	...
Refined lead	11,352	5,034	6,376
United States	2,868	1,758	859
Netherlands	...	...	56
United Kingdom	8,406	3,276	5,393
Japan	...	..	24
Other countries	78	...	44
Total Exports:			
Ore and refined	20,365	8,352	8,467
Pipe and tubing	1	...	3
Lead scrap	...	205	48

Copper Imports and Exports By Principal Countries

(A. B. M. S.)

Reported in ingots, slabs, etc.; metric tons except where otherwise noted.

	1958 Nov.	1958 Dec.	1959 Jan.
IMPORTS			
U. S. (blist., s.t.)	23,672	30,318	30,419
(ore, etc., s.t.)	12,382	5,140	9,931
ref., s.t.)	11,120	4,453	2,862
Belgium†	17,802	...	...
Denmark	629	101	...
France (crude)	...	813	...
(refined)	18,556	14,207	17,451
Italy	11,065	...	...
Germany, West	24,407	...	...
Netherlands	2,246	2,355	1,781
Norway	758	330	...
Sweden	4,795	5,337	...
Switzerland	2,174	2,833	2,741
U. K. (l.t.)	32,958	38,200	39,960
India (blister/ refined l.t.)*	2,464	1,923	2,651
Australia (blister ref'd l.t.)*	100	...	...
EXPORTS			
U. S. (ore and unref., s.t.)	307	396	1,079
(refined, s.t.)	44,498	45,587	22,196
Canada (refined, s.t.)	14,391	11,138	10,620
Belgium†	12,140	...	...
Finland‡	1,337	675	...
Germany, West	5,159	...	...
Norway	1,359	1,165	...
Sweden	998	1,526	...
U. K. (l.t.)	6,600	3,786	7,835
No. Rhodesia (blister & ref'd l.t.)*	2,140	33,836	41,058

† Includes alloys.
‡ Includes old.
* British Bureau of Non-Ferrous Metal Statistics.

French Copper Imports

(A. B. M. S.)

(In metric tons)

	1958 Dec.	1959 Jan.	1959 Feb.
Crude copper for refining (blister, black and cement)	813	...	813
Belgian Congo	813	...	813
Refined	14,207	17,451	14,451
United States	6,884	8,819	5,437
Canada	610	254	1,270
Belgium	4,144	4,218	4,878
Germany (W.)	166	357	148
Norway	203	203	...
United Kingdom	10	250	40
Belgian Congo	2,031	2,410	1,212
Rhodesia-Nyasaland	159	940	1,466

French Zinc Imports

(A. B. M. S.)

(In metric tons)

	1958 Dec.	1959 Jan.	1959 Feb.
Ore (gross weight)	25,760	16,621	23,864
Belgium	...	524	...
Greece	3,870	545	1,565
Italy	...	3,935	369
Norway	353	...	651
Spain	1,902	795	...
Yugoslavia	7,420	...	5,108
Algeria	1,430	3,038	6,776
Morocco	6,901	7,784	9,395
Belgian Congo	3,884	...	...
Slabs, bars, blocks, etc.	1,425	1,717	1,094
Belgium	1,208	1,165	915
Germany (W.)	100	100	118
Italy	117	152	51
Netherlands	...	280	...
Norway	..	6	...
Algeria	...	14	10

French Metal Exports

(A. B. M. S.)

(In metric tons)

	1958 Dec.	1959 Jan.	1959 Feb.
LEAD			
Ore (g. wt.)	33	668	247
Pig lead	2,268	2,310	1,554
Uruguay	297	25	30
Denmark	406	...	457
Germany (W.)	775	260	540
Switzerland	760	755	505
United Kingdom	...	1,270	...
Other countries	30	...	22
Antimonial lead	279	327	257
COPPER			
Crude copper for refining (blister, black and cement)	...	...	60
ZINC			
Slabs, bars, blocks, etc.	1	50	20

U. K. Copper Imports

(British Bureau of Non-Ferrous Metal Statistics)

(In tons of 2,240 lbs.)

	1958 Dec.	1959 Jan.	1959 Feb.
(Gross Weight)			
Copper and copper alloys	38,200	39,960	31,432
U. of S. Africa	501	725	..
Rhodesia-Nyasaland	2,939	19,337	16,752
Canada	7,982	3,874	3,778
Belgium	355	9	3
Germany (W.)	42	44	30
Norway	275	226	200
Sweden	...	...	1
United States	17,022	8,709	4,120
Chile	7,800	6,044	6,275
Peru	...	150	...
Belgian Congo	750	800	250
Other countries	534	42	23
Of which:			
Electrolytic	29,645	30,254	20,339
Other refined8	4,400	2,625	3,375
Blister or rough	2,501	6,959	7,644
Wrought and alloys	1,654	122	74
Total	38,200	39,960	31,432

Nonferrous Castings

MONTHLY SHIPMENTS, BY TYPE OF METAL
(Bureau of Census — Thousands of Pounds)

	Aluminum	Copper	Magnesium	Zinc	Lead Die
1954 Total	607,764	834,557	25,572	474,741	18,396
1955 Total	833,058	1,011,748	27,892	781,254	21,045
1956 Total	801,136	966,473	36,168	88,069	20,734
1957					
Aug.	55,735	71,233	2,315	49,829	2,165
Sept.	58,692	70,804	2,279	47,736	2,115
Oct.	64,140	81,836	2,192	62,332	2,481
Nov.	58,898	70,187	1,920	58,689	1,590
Dec.	53,102	65,708	1,533	49,597	1,399
Total	751,856	875,389	30,322	663,330	23,791
1958					
January	57,845	69,707	1,881	50,658	1,566
February	50,695	58,356	1,803	42,687	1,294
March	50,547	60,157	1,975	39,719	1,630
April	44,948	59,311	2,215	35,796	1,467
May	44,093	57,506	2,422	36,447	1,655
June	40,701	57,124	2,205	38,132	1,971
July	38,818	51,124	2,200	32,765	1,394
August	45,034	57,790	1,869	35,860	1,804
September	52,796	64,447	2,804	47,127	1,725
October	55,699	74,012	2,627	45,045	1,708
November	55,793	62,476	2,615	48,431	1,409
December	59,487	67,905	2,612	55,600	1,497
Total	596,816	739,915	27,228	508,297	18,920
1959					
January	62,927	66,874	2,151	53,347	1,571

Copper Castings Shipments

BY TYPE OF CASTING
(Bureau of Census) (Thousands of Pounds)

	Total	Sand	Permanent Mold	Die	All Other
1952 Total	1,009,910	910,862	63,865	8,259	26,924
1953 Total	990,496	888,369	61,316	10,077	30,734
1954 Total	834,557	751,804	48,849	6,480	27,394
1955 Total	1,011,748	907,852	63,041	8,541	31,408
1956 Total	966,113	866,404	57,522	10,023	32,134
1957					
July	60,621	54,847	3,010	825	1,939
Aug.	71,233	64,953	3,278	799	2,203
Sept.	70,804	64,470	3,243	870	2,221
Oct.	81,836	74,391	3,693	1,057	2,695
Nov.	70,187	63,944	3,006	862	2,375
Dec.	65,708	59,606	3,046	888	2,168
Total	875,389	789,819	44,746	10,776	30,048
1958					
January	69,707	63,294	3,327	894	2,192
February	58,356	52,579	3,202	796	1,779
March	60,157	54,007	3,395	823	1,932
April	59,311	53,271	3,385	949	1,705
May	57,506	51,634	3,077	891	1,904
June	57,124	51,967	3,001	839	1,317
July	51,124	46,636	2,351	792	1,345
August	57,590	52,981	2,425	682	1,702
September	64,447	58,435	2,888	876	2,248
October	74,012	67,564	3,239	790	2,419
November	62,746	57,386	2,604	810	1,946
December	67,905	61,119	3,535	1,059	2,192
Total	739,985	667,255	36,529	10,201	22,681
1959					
January	66,874	59,856	3,572	1,216	2,230

Nickel Averages

Electro, cathode sheets, 99.00%, f.o.b. refinery, duty included
(Cents per pound)

	1956	1957	1958	1959
Jan.	64.50	74.00	74.00	74.00
Feb.	64.50	74.00	74.00	74.00
Mar.	64.50	74.00	74.00	74.00
Apr.	64.50	74.00	74.00	....
May	64.50	74.00	74.00	....
June	64.50	74.00	74.00	....
July	64.50	74.00	74.00	....
Aug.	64.50	74.00	74.00	....
Sept.	64.50	74.00	74.00	....
Oct.	64.50	74.00	74.00	....
Nov.	64.50	74.00	74.00	....
Dec.	72.48	74.00	74.00	....
Aver.	65.165	74.00	74.00	....

Platinum Averages

N. Y. MONTHLY QUOTATIONS
(Dollars per Troy Ounce)

	1956	1957	1958	1959
Jan.	106.30	101.92	77.85	52.57
Feb.	104.34	98.59	74.82	59.25
Mar.	104.23	93.50	72.096	77.10
Apr.	103.92	93.45	70.72	....
May	105.23	92.865	67.34	....
June	106.50	92.02	66.18	....
July	106.50	90.265	64.35	....
Aug.	105.76	84.426	60.94	....
Sept.	105.50	84.00	59.60	....
Oct.	104.85	84.00	57.327	....
Nov.	104.50	83.80	56.41	....
Dec.	104.50	78.70	53.154	....
Aver.	105.18	89.79	65.07	....

Spot Straits Tin

(Straits, Open Market, N. Y.)
Monthly Average Prices

	1956	1957	1958	1959
Jan.	105.036	101.511	92.94	99.411
Feb.	100.803	101.132	93.915	102.785
Mar.	100.786	99.643	94.452	103.042
Apr.	99.268	99.304	92.988	....
May	96.994	98.347	94.512	....
June	94.589	98.05	94.708	....
July	96.143	96.52	94.892	....
Aug.	99.049	94.261	94.988	....
Sept.	103.809	93.406	94.101	....
Oct.	106.023	91.838	96.523	....
Nov.	110.921	89.236	99.118	....
Dec.	104.268	92.35	98.989	....
Aver.	101.475	96.301	95.177	....

Prompt Tin Prices

(Straits, Open Market, N. Y.)
Monthly Average Prices
(Cents per Pound)

	1956	1957	1958	1959
Jan.	104.768	101.347	92.653	99.351
Feb.	100.586	100.257	93.763	102.708
Mar.	100.524	99.476	94.363	103.042
Apr.	99.145	99.286	92.988	....
May	96.853	98.335	94.512	....
June	94.488	98.025	94.619	....
July	96.131	96.44	94.892	....
Aug.	98.924	94.159	94.976	....
Sept.	103.559	93.313	94.054	....
Oct.	105.716	91.848	96.455	....
Nov.	110.329	89.236	98.985	....
Dec.	104.00	92.34	98.96	....
Aver.	101.252	93.672	95.069	....

Quicksilver Averages

N. Y. Monthly Averages
Virgin, Dollars per 76-lb Flask

	1956	1957	1958	1959
Jan.	277.80	256.00	224.35	219.50
Feb.	270.29	256.00	229.39	219.50
Mar.	261.40	256.00	232.096	223.57
Apr.	267.22	256.00	233.06	....
May	267.675	256.00	229.48	....
June	260.69	256.00	229.00	....
July	256.06	256.00	230.25	....
Aug.	256.00	252.20	240.27	....
Sept.	256.00	248.58	241.12	....
Oct.	255.92	234.48	235.94	....
Nov.	255.13	228.33	230.05	....
Dec.	256.00	226.50	223.54	....
Aver.	261.71	248.51	230.96	....

Primary Aluminum Output, Shipments and Stocks

(U. S. Department of Interior)

	Stocks beginning of month short tons	Production short tons	Sold or Used — Short tons	Sold or Used — Value f. o. b. plant	Stocks end of month short tons
1957					
October	175,085	133,759	125,430	67,292,495	183,414
November	183,414	135,024	146,333	78,858,676	172,105
December	172,105	140,036	140,996	70,850,564	171,145
Total	....	1,647,714	1,579,035	.....	.....
1958					
January	171,142	139,910	134,983	$69,837,103	176,069
February	176,069	121,980	118,608	61,426,895	179,441
March	179,441	134,019	123,461	63,341,320	189,999
April	189,999	124,999	127,608	63,222,858	187,390
May	187,390	126,357	130,160	62,816,641	183,557
June	183,557	115,326	130,787	63,091,679	168,096
July	168,096	118,541	134,083	64,726,335	152,554
August	152,554	125,416	132,765	64,611,494	145,205
September	145,205	124,714	146,870	71,641,275	125,049
October	124,274	139,836	139,908	68,881,146	124,202
November	124,202	140,962	126,619	62,133,129	138,545

Aluminum Wrought Products

PRODUCERS' MONTHLY NET SHIPMENTS

(Bureau of Census — Thousands of Pounds)

	Total	Plate, Sheet, & Strip	Rolled Structural Shapes, Rod, Bar & Wire	Extruded Shapes Tube Blooms & Tubing	Powder, Flake, & Paste
1955 Total	2,805,500	1,542,368	365,391	812,311	35,854
1956 Total	2,870,101	1,577,601	398,602	782,398	28,017
1957					
October	230,913	121,654	23,075	69,554	2,104
November	186,974	114,618	31,501	64,197	1,716
December	177,520	96,078	21,363	54,672	1,480
Total	2,677,423	1,396,502	399,040	789,430	28,187
1958					
January	193,678	108,616	21,915	57,188	1,538
February	207,459	118,835	21,983	58,296	1,927
March	190,092	108,913	20,692	55,973	1,533
April	210,477	118,793	22,178	62,737	1,954
May	217,299	115,660	27,361	67,376	2,389
June	228,587	118,767	28,674	74,580	2,248
July	229,654	126,160	24,678	72,194	2,642
August	213,548	115,376	23,581	67,953	3,154
September	231,168	125,937	23,287	75,269	2,665
October	254,023	128,967	24,442	85,038	2,163
November	216,249	121,190	17,771	71,666	1,723
December	235,377	130,474	26,253	72,979	1,806
Total	2,624,911	1,441,385	285,355	821,249	25,742
1959					
January	235,463	132,361	26,480	70,309	2,246
February	230,733	131,564	21,740	71,364	2,028

Aluminum Castings Shipments

(Bureau of Census)

BY TYPE OF CASTING

(Thousands of Pounds)

	Total	Sand	Permanent Mold	Die	All Other
1954 Total	609,066	155,738	213,968	232,726	6,800
1955 Total	833,058	171,757	298,115	354,804	8,282
1956 Total	801,036	171,763	245,421	376,108	7,736
1957					
October	64,140	11,570	20,543	31,936	...
November	58,898	10,411	18,611	29,793	...
December	53,102	9,302	16,724	26,978	...
1957 Total	751,656	144,121	232,326	369,086	...
1958					
January	57,845	10,724	18,082	28,937	...
February	50,695	9,601	15,456	25,579	...
March	50,547	9,311	15,255	25,918	...
April	44,948	9,531	13,369	21,956	...
May	44,093	9,312	13,648	21,091	...
June	40,701	8,644	13,679	18,292	...
July	38,818	8,658	12,342	17,714	...
August	45,034	9,034	14,426	21,505	...
September	52,796	10,261	16,241	26,254	...
October	55,699	10,932	17,189	27,511	...
November	55,793	10,539	16,942	28,264	...
December	59,487	10,874	18,970	29,579	...
Total	596,790	117,421	186,949	292,599	...
1959					
January	62,927	10,907	20,606	21,349	...

Virgin Aluminum

Ingot (30 lb.) 99½% Plus, Delivered

Monthly Average Prices

(Cents per pound)

	1956	1957	1958	1959
Jan.	24.40	27.10	28.10	26.80
Feb.	24.40	27.10	28.10	26.80
Mar.	24.60	27.10	28.10	26.80
Apr.	25.90	27.10	26.10	....
May	25.90	27.10	26.10	....
June	25.90	27.10	26.10	....
July	25.90	27.10	26.10	....
Aug.	26.70	28.10	26.77	....
Sept.	27.10	28.10	26.80	....
Oct.	27.10	28.10	26.80	....
Nov.	27.10	28.10	26.80	....
Dec.	27.10	28.10	26.80	....
Aver.	26.008	27.517	26.889	....

Magnesium Wrought Products Shipments

(Bureau of Census)

(Thousands of Pounds)

	1955	1956	1957	1958
Jan.	1,776	2,188	2,130	1,271
Feb.	1,648	1,901	2,522	2,522
Mar.	1,947	1,946	2,388	1,398
Apr.	1,756	2,279	2,511	1,479
May	1,836	2,462	2,230	1,443
June	1,686	2,302	1,881	1,709
July	1,437	2,002	1,428	1,227
Aug.	1,742	2,523	1,540	1,823
Sept.	2,159	2,031	1,501	1,807
Oct.	1,667	861	1,453	....
Nov.	1,954	2,141	1,230	....
Dec.	1,577	2,452	1,102	....
Total	21,186	24,975	21,915	....

Cadmium Averages

N. Y. Monthly Averages

Cents per lb. in ton lots

	1956	1957	1958	1959
Jan.	170.00	170.00	155.00	145.00
Feb.	170.00	170.00	155.00	145.00
Mar.	170.00	170.00	155.00	145.00
Apr.	170.00	170.00	155.00	....
May	170.00	170.00	155.00	....
June	170.00	170.00	155.00	....
July	170.00	170.00	155.00	....
Aug.	170.00	170.00	155.00	....
Sept.	170.00	170.00	152.60	....
Oct.	170.00	170.00	145.00	....
Nov.	170.00	170.00	145.00	....
Dec.	170.00	166.40	145.00	....
Aver.	170.00	169.70	152.30	....

Steel Ingot Production

(American Iron and Steel Institute)

Period	Estimated Production — OPEN HEARTH Net tons	% of capacity	BESSEMER Net tons	% of capacity	All Companies ELECTRIC Net tons	% of capacity	TOTAL Net tons	% of capacity	Calculated weekly production, all companies (net tons)
1954 Total	80,327,494	73.6	2,548,104	53.2	5,436,054	52.0	88,311,652	71.0	1,693,741
1956 Total	102,840,585	91.6	3,227,997	67.4	9,147,567	81.2	115,216,149	89.8	2,203,828
1957									
September	8,135,139	84.7	185,967	50.2	656,800	66.4	8,979,906	81.8	2,097,642
October	8,348,522	84.1	154,577	40.5	694,618	67.6	9,197,717	81.1	2,076,234
November	7,674,698	79.9	134,709	36.4	583,512	59.0	8,392,919	76.5	1,..56,391
December	6,783,262	68.3	108,337	28.3	528,686	51.7	7,420,285	65.5	1,678,798
Total	101,657,776	87.0	2,475,138	54.9	8,582,082	71.3	112,714,996	84.5	2,161,776
1958									
January	6,085,124	58.6	121,338	35.5	547,450	44.8	6,753,912	56.1	1,524,585
February	5,252,112	56.0	81,597	26.4	448,614	40.6	5,782,373	53.6	1,445,581
March	5,598,944	53.9	122,317	35.7	533,361	43.6	6,254,622	52.3	1,412,000
April	4,875,619	48.5	109,453	33.1	547,939	46.3	5,532,991	47.8	1,289,741
May	5,602,123	53.7	110,366	32.3	588,670	48.2	6,301,159	52.7	1,422,384
June	6,378,942	63.4	88,125	26.6	660,413	55.8	7,127,480	61.6	1,661,417
July	5,712,587	55.0	114,218	33.4	593,600	48.6	6,420,405	53.7	1,452,580
August	6,481,815	62.4	134,135	39.3	670,383	54.8	7,286,003	61	1,644,696
September	6,769,660	67.3	103,194	31.2	737,518	62.3	7,610,372	65.8	1,778,124
October	7,795,541	75.0	148,458	43.4	873,779	71.5	8,817,278	73.8	1,990,469
November	7,572,555	75.3	145,867	44.1	850,896	71.9	8,569,318	74.1	1,997,510
December	7,764,000	74.7	117,000	34.2	832,000	68.1	8,793,000	72.9	1,971,000
Total	75,888,392	62.0	1,396,348	34.7	7,972,623	55.4	85,257,363	69.6	1,635,162
1959									
January	8,280,985	77.1	120,005	39.5	729,675	63.7	9,317,385	74.3	2,103,247
February	8,540,000	88.0	129,000	47.0	757,000	73.1	9,603,000	84.8	2,401,000
March	10,213,000	95.0	185,000	60.9	932,000	81.3	11,567,000	92.3	2,611,000

Blast Furnace Output

(American Iron and Steel Institute)

	net tons — Pig Iron	Ferro-manganese & Spiegel	Total	% Capacity
1950				
Tl. Yr.	64,810,272	673,896	65,484,168	91.5
1951				
Tl. Yr.	70,487,380	745,381	71,232,761	98.3
1952				
Tl. Yr.	61,528,665	629,926	62,158,591	84.2
1953				
Total	74,987,721	855,038	75,842,759	95.5
1954				
Total	58,119,382	568,735	58,688,117	71.6
1955				
Total	77,114,073	868,758	77,800,831	92.7
1956				
Aug.	5,100,869	41,548	5,142,217	70.8
Sept.	6,873,064	59,584	6,932,648	98.7
Oct.	7,245,650	69,909	7,315,559	100.8
Nov.	6,977,457	58,614	7,036,091	100.1
Dec.	7,268,743	65,841	7,334,584	101.0
Total	75,301,134	664,341	75,965,475	88.9
1957				
Jan.	7,209,547	72,826	7,282,373	98.8
Feb.	6,596,133	61,973	6,658,106	100.0
Mar.	7,179,100	67,779	7,246,879	98.3
Apr.	6,810,102	60,784	6,870,886	96.3
May	6,879,881	65,566	6,945,447	94.2
June	6,593,326	66,266	6,659,592	93.3
July	6,625,901	66,031	6,691,932	90.8
Aug.	6,719,763	61,988	6,781,751	92.0
Sept.	6,569,074	58,837	6,627,911	92.9
Oct.	6,454,450	65,028	6,519,478	88.4
Nov.	5,711,242	68,637	5,779,879	81.0
Dec.	5,212,624	69,175	4,854,444	62.8
Total	78,557,011	782,660	79,339,671	91.4
1958				
Jan.	4,785,269	69,175	4,854,444	62.8
Feb.	4,016,276	47,953	4,064,229	58.2
Mar.	4,418,778	45,175	4,463,953	57.8
April	3,787,907	39,302	3,827,209	51.2
May	4,048,328	25,468	4,073,796	52.7
June	4,396,285	26,463	4,422,748	59.1
July	4,277,515	26,668	4,304,183	55.7
Aug.	4,799,955	31,374	4,831,329	62.1
Sept.	5,041,042	31,348	5,072,390	67.8
Oct.	5,835,995	36,963	5,872,958	76.0
Nov.	5,907,888	39,275	5,946,163	79.5
Dec.	6,025,385	47,505	6,072,890	78.6
Total	57,298,644	465,456	57,298,644	63.5
1959				
Jan.	6,260,395	48,572	6,211,823	77.9
Feb.	6,047,398	45,274	6,192,672	85.3
March	7,461,760	48,291	7,510,051	93.4

Steel Castings Shipments

(Bureau of Census)

	(Short Tons) Total	For Sale	For Own Use
1951	2,101,604	1,507,413	594,191
1952	1,925,116	1,476,352	448,767
1953	1,829,277	1,290,016	431,330
1954			
Total	1,184,096	880,158	303,938
1955			
Total	1,530,694	1,166,706	363,988
1956			
Dec.	158,725	125,569	33,156
Total	1,931,987	1,512,290	416,697
1957			
Jan.	169,240	133,826	35,414
Feb.	154,932	121,667	33,265
Mar.	160,054	124,416	35,638
Apr.	162,498	124,549	37,949
May	164,575	125,431	39,144
June	153,647	119,353	34,294
July	122,018	90,037	31,981
Aug.	145,926	111,080	34,846
Sept.	139,002	105,611	33,391
Oct.	146,397	113,216	33,181
Nov.	127,115	98,436	28,679
Dec.	120,787	92,125	28,662
Total	1,766,191	1,261,301	406,444
1958			
Jan.	120,722	94,717	26,005
Feb.	103,297	79,708	23,589
Mar.	106,233	82,195	24,038
Apr.	91,464	69,121	22,343
May	87,002	66,086	20,916
June	92,681	71,624	21,237
July	68,802	48,618	10,184
Aug.	80,886	59,816	21,070
Sept.	85,277	64,586	20,691
Oct.	95,389	73,367	22,022
Nov.	85,267	65,788	19,479
Dec.	103,800	81,360	22,440
Total	1,114,939	859,125	255,814
1959			
Jan.	105,392	82,693	22,709

Galvanized Sheet Shipments

(American Iron & Steel Institute)

(Net Tons)

	1956	1957	1958	1959
Jan.	269,464	235,902	186,649	279,244
Feb.	272,997	205,048	167,627	281,637
Mar.	291,193	206,836	195,885	.....
Apr.	266,728	198,585	206,368	.....
May	272,741	206,657	231,318	.....
June	279,058	239,037	277,180	.....
July	*	167,247	239,883	.....
Aug.	276,048	186,790	253,263	.....
Sept.	256,803	183,952	258,723	.....
Oct.	278,637	212,886	290,157	.....
Nov.	255,135	190,380	253,909	.....
Dec.	239,173	159,363	266,472	.....
Total	2,957,991	2,392,637	2,828,848	.....

* Combined with August figures.

SHIPMENTS OF TIN-TERNEPLATE

(American Iron & Steel Institute)

(Net Tons)

	—Hot Dipped— 1958	1959	—Electrolytic— 1958	1959
Jan.	31,455	30,304	474,359	417,210
Feb.	29,451	24,602	397,861	442,625
Mar.	36,794	.....	419,102	.....
Apr.	43,670	.....	468,568	.....
May	37,628	.....	402,521	.....
June	42,850	.....	429,761	.....
July	45,481	.....	422,776	.....
Aug.	46,037	.....	464,439	.....
Sept.	43,217	.....	525,739	.....
Oct.	60,261	.....	763,361	.....
Nov.	14,596	.....	113,134	.....
Dec.	15,842	.....	150,942	.....
Total	447,396	.....	5,940,190	.....

Steel Ingot Operations

(Percentage of Capacity as Reported by American Iron & Steel Institute)

Week Beginning	1956	1957	1958	1959
Jan. 6	97.6	98.4	56.1	76.2
Jan. 13	98.6	96.4	57.0	73.6
Jan. 20	99.0	96.6	55.5	74.6
Jan. 27	100.4	97.6	54.0	72.6
Feb. 4	99.3	97.1	54.0	76.9
Feb. 11	99.1	97.7	53.5	83.8
Feb. 18	98.8	97.8	50.9	83.7
Feb. 25	98.8	96.0	54.6	88.5
Mar. 4	99.3	97.1	53.1	90.3
Mar. 11	100.0	93.8	52.4	92.0
Mar. 18	100.6	93.5	52.5	92.9
Mar. 25	99.5	92.4	50.6	92.9
Apr. 1	96.6	90.6	48.6	93.2
Apr. 8	97.7	90.3	48.5	93.3
Apr. 15	100.9	90.4	46.8	...
Apr. 22	100.2	88.7	47.9	...
Apr. 29	100.5	87.0	47.8	...
May 6	96.4	86.7	49.4	...
May 13	95.2	84.2	52.3	...
May 20	95.3	86.4	56.4	...
May 27	97.3	88.0	58.1	...
June 3	96.3	87.5	62.4	...
June 10	96.7	86.5	84.0	...
June 17	93.4	85.2	64.9	...
June 24	93.0	84.0	61.7	...
July 1	84.9	78.5	51.0	...
July 8	12.3	78.7	53.4	...
July 15	12.9	79.3	54.9	...
July 22	14.6	79.4	57.3	...
July 29	17.0	79.4	57.8	...
Aug. 5	16.9	79.8	58.8	...
Aug. 12	57.5	80.6	60.5	...
Aug. 19	87.5	82.1	62.6	...
Aug. 25	95.8	82.2	63.5	...
Sept. 2	97.0	81.0	61.7	...
Sept. 9	98.7	81.9	65.9	...
Sept. 16	100.6	82.1	65.6	...
Sept. 23	100.6	82.2	67.3	...
Sept. 30	101.6	82.6	70.4	...
Oct. 7	101.8	82.8	71.6	...
Oct. 14	100.9	80.9	74.2	...
Oct. 21	101.4	80.2	74.8	...
Oct. 28	101.2	79.7	75.0	...
Nov. 4	101.3	78.0	74.5	...
Nov. 11	100.6	77.7	74.5	...
Nov. 18	100.2	76.0	74.1	...
Nov. 25	100.1	72.1	73.7	...
Dec. 2	101.1	71.5	73.5	...
Dec. 9	101.3	69.2	73.5	...
Dec. 16	102.0	67.7	74.5	...
Dec. 23	94.3	53.7	74.5	...
Dec. 30	97.3	59.0	73.6	...

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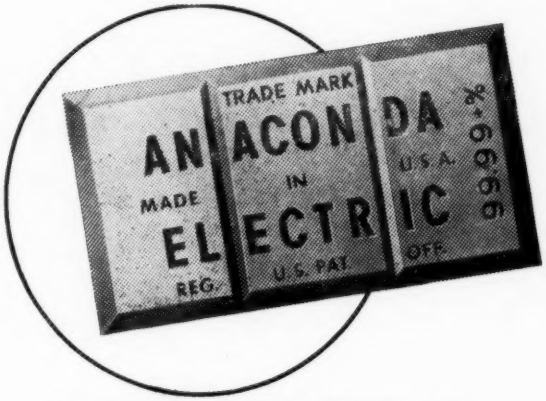

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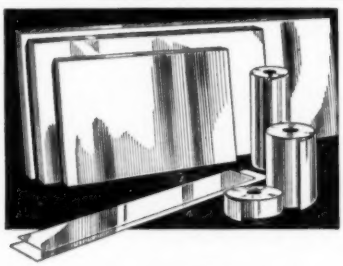

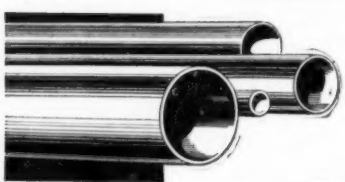

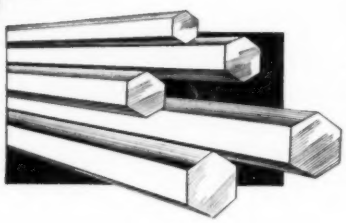

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